ORDER NO. VRD9207M137

Service Manual

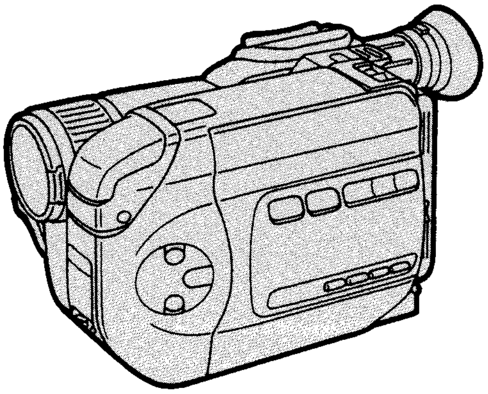
General Description
Adjustment Procedures
Block/Schematic Diagrams
Exploded Views/Parts List

Panasonic VHS C VHS PAL 625

Hi-Fi HQ

VHS-C Movie

NV-S6E/B/A
NV-S600EN



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: DC 6.0V Consumption; Recording mode; 7.0W (Battery operation)
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7mm)
TAPE SPEED	SP mode: 23.39mm/s LP mode: 11.7mm/s Record/Playback Time: SP mode: 45min. with NV-EC45E LP mode: 90min. with NV-EC45E FF/REW Time: less than 6.5min. with NV-EC45E
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 20 lux
	LENS: 8 : 1 Power Zoom Lens with Digital AI Auto Focus, Auto Iris, Auto Focus System, F1.4 (6～48mm), Filter Diameter 37mm
	IMAGE SENSOR: 1/3 inch CCD Image Sensor
	VIEW FINDER: 2/3″ Electronic View Finder

ITEM	SPECIFICATION
VIDEO	HEADS: 4 rotary heads, 1 flging erase head
	OUTPUT: PHONO CONNECTOR; 1.0Vp-p 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal-Mono) 4 rotary heads; 2 channels (Hi-Fi Sound-Stereo)
	OUTPUT: PHONO CONNECTOR; −8dB, 47kΩ unbalanced
	INPUT: MIC IN (M3); −70dB 4.7kΩ or more unbalanced
WEIGHT	Approx. 710g (without Battery Pack)
DIMENSIONS	101(W) × 114(H) × 197(D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor 1 pc. Shoulder Strap 1 pc. AV Output Cable 1 pc. DC Input Cable 1 pc. Battery for Cassette Adaptor Operation 1 pc. Battery for Clock Operation 1 pc. Phono/BNC Plug (NV-S6B) 1 pc. RF Adaptor (NV-S6B/A, NV-S600EN) 1 pc. Soft Case (NV-S6B)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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Technical Information

Service caution

1. Adjustment the Camera Section.

In the camera section EEPROM(Electric Programmable Read Only Memory) is adopted as adjustment element instead of conventional variable resistor.
EEPROM memorize the adjustment value as digital data which is supplied to adjustment point as shown in Fig. T1.
Thus, when adjusting the camera process it is necessary to change the adjustment data which is stored in EEPROM. For this prupose, EVR(Electric Variable Resistor) Fixture enables to communicate with EEPROM directly and can change its stored adjustment data.

The EVR Fixture is connect with camera as shown below and is used. (For more details, Please refer to Camera adjustment section.)

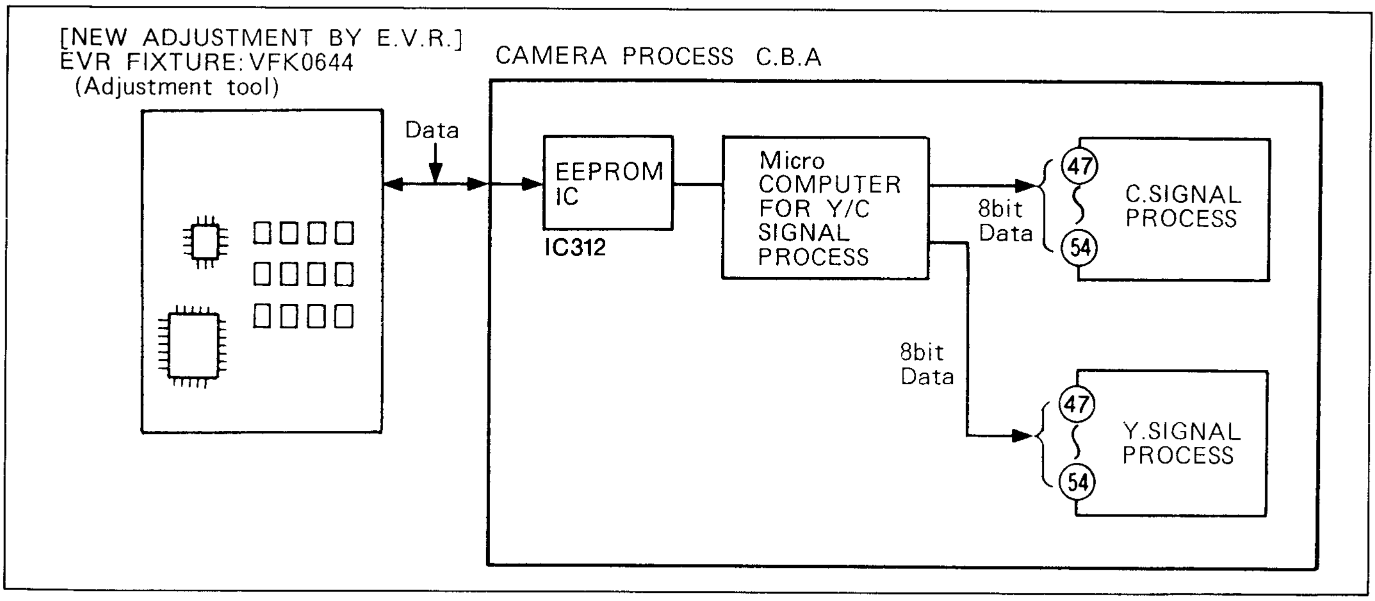

[NEW ADJUSTMENT BY E.V.R.]
EVR FIXTURE: VFK0644
(Adjustment tool)
CAMERA PROCESS C.B.A
Data
EEPROM IC
IC312
Micro COMPUTER FOR Y/C SIGNAL PROCESS
8bit Data
47
54
C.SIGNAL PROCESS
8bit Data
47
54
Y.SIGNAL PROCESS

Fig. T1

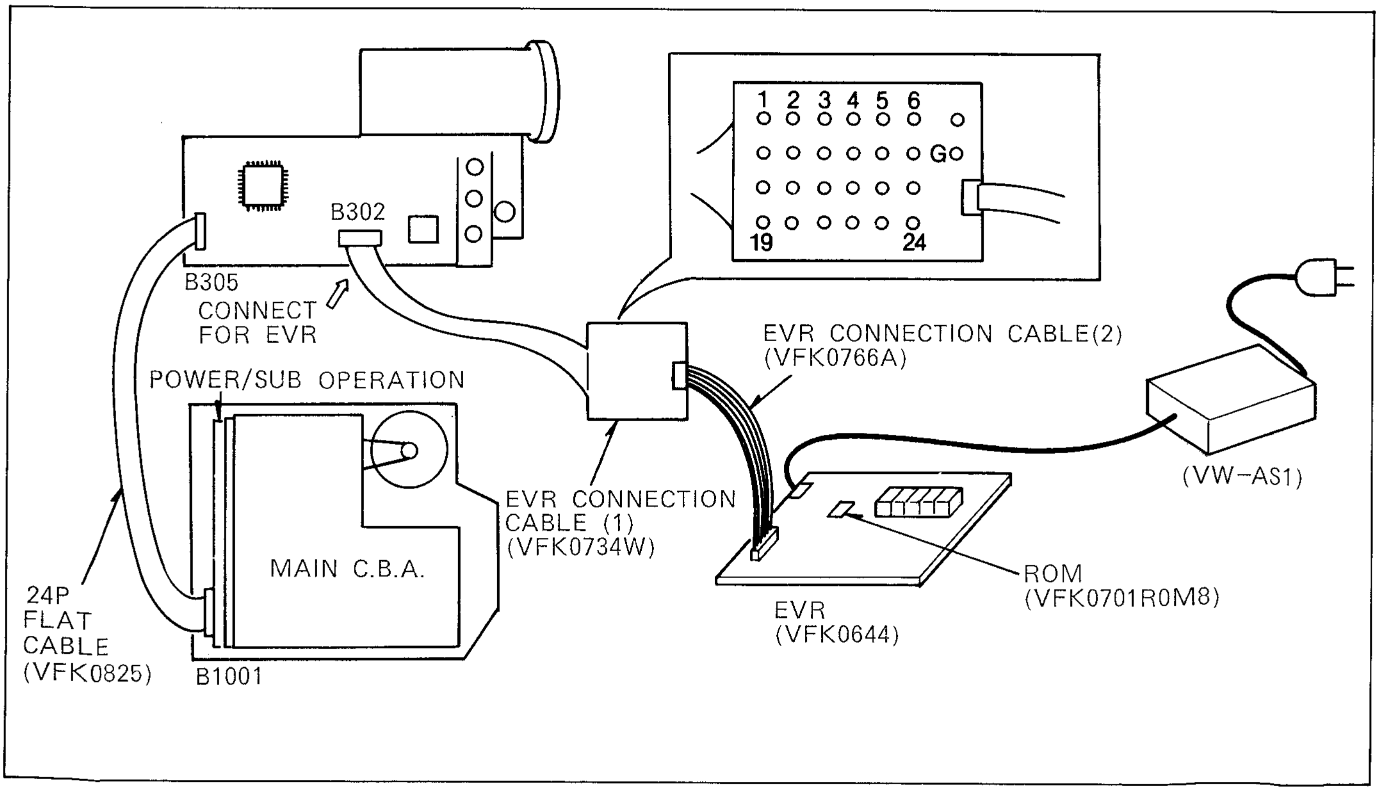

1 2 3 4 5 6
Go
19
24
B302
B305
CONNECT FOR EVR
POWER/SUB OPERATION
MAIN C.B.A.
24P FLAT CABLE (VFK0825)
B1001
EVR CONNECTION CABLE (1) (VFK0734W)
EVR CONNECTION CABLE(2) (VFK0766A)
EVR (VFK0644)
ROM (VFK0701R0M8)
(VW-AS1)

Fig. T2

2. Service Extension Cable.

Use following Extension Cable when checking or adjusting the individual circuit board assembly (C.B.A.) of video part or camera part.

No.	PART NBR	PART NAME	CONNECTION	Q'TY
1	VFK0686	17 PIN EXTENSION CABLE	MAIN C.B.A. B6002~VTR OPERATION P6302	1
2	VFK0825	24 PIN FLAT CABLE	PROCESS C.B.A. FP304~POWER C.B.A. B1001	1
3	VFK0727	16 PIN FLAT CABLE	MAIN C.B.A. FP6004~CHASSIS	1
4	VFK0729	6 PIN FLAT CABLE	MAIN C.B.A. FP6005~CHASSIS	1
5	VFK0752	34 PIN EXTENSION CABLE	MAIN C.B.A B6006~POWER C.B.A. B6501	1
6	VFK0728	9 PIN FLAT CABLE	MAIN C.B.A. FP4002~A/C HEAD	1
7	VFK0723	22 PIN EXTENTION CABLE	MAIN C.B.A. B6201~DRIVE C.B.A. B2001	1
8	VFK0670	18 PIN FLAT CABLE	MAIN C.B.A. FP6001~CAMERA OPERATION	1
9	VFK0668	24 PIN EXTENSION CABLE	MAIN C.B.A. B4001~HI-FI C.B.A. B4501	1
10	VFK0698	18 PIN FLAT CABLE	PROCESS C.B.A. B305~SENSOR C.B.A. B101	1
11	VFK0724	32 PIN FLAT CABLE	PROCESS C.B.A. B301~SENSOR C.B.A. B202	1

3. How To Use Extension Cables.

(1) Connection between Main C.B.A., PROCESS C.B.A and VTR operation C.B.A

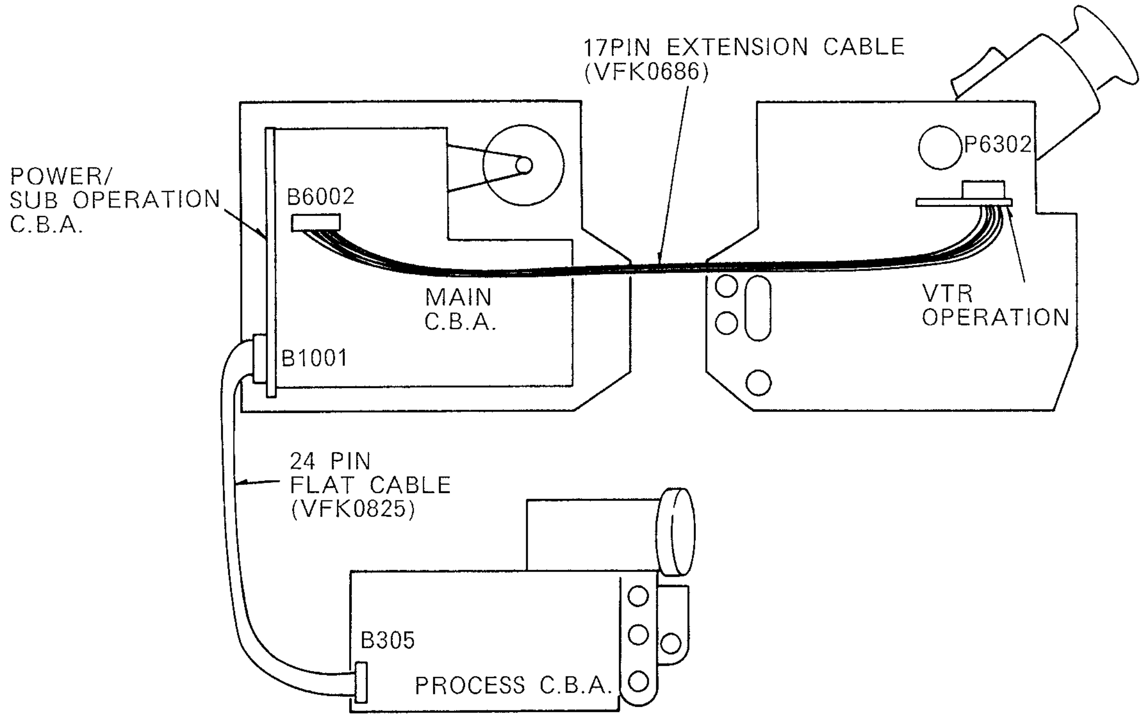

17PIN EXTENSION CABLE
(VFK0686)
POWER/
SUB OPERATION
C.B.A.
B6002
MAIN
C.B.A.
B1001
P6302
VTR
OPERATION
24 PIN
FLAT CABLE
(VFK0825)
B305
PROCESS C.B.A.

Fig. T3-1

(2) Connection between Main C.B.A. and chassis

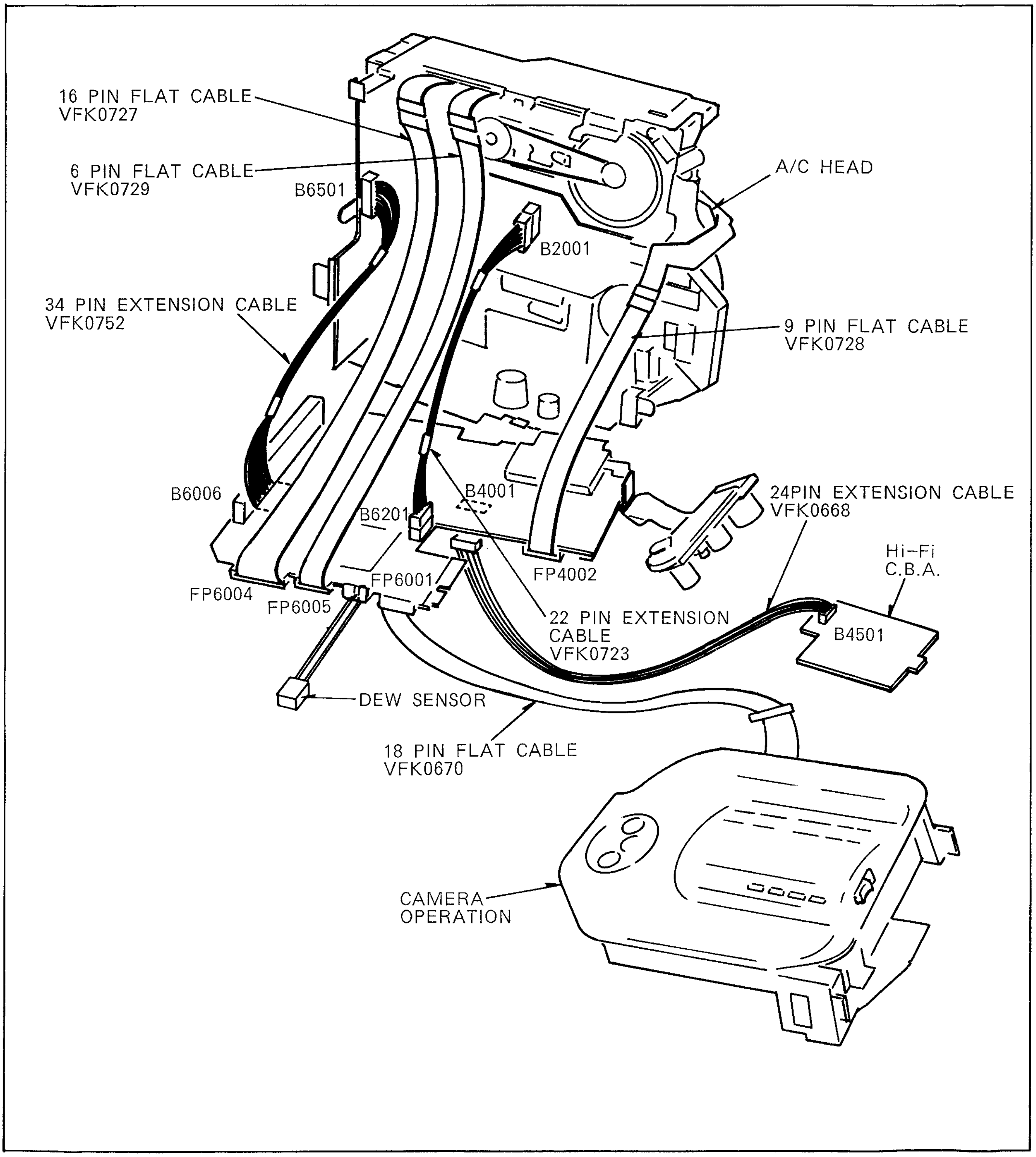

16 PIN FLAT CABLE
VFK0727
6 PIN FLAT CABLE
VFK0729
B6501
B2001
A/C HEAD
34 PIN EXTENSION CABLE
VFK0752
9 PIN FLAT CABLE
VFK0728
B6006
B4001
B6201
24PIN EXTENSION CABLE
VFK0668
Hi-Fi
C.B.A.
FP6001
FP4002
FP6004
FP6005
22 PIN EXTENSION
CABLE
VFK0723
B4501
DEW SENSOR
18 PIN FLAT CABLE
VFK0670
CAMERA
OPERATION

Fig. T3-2

(3) Connection between Process C.B.A and Sensor C.B.A

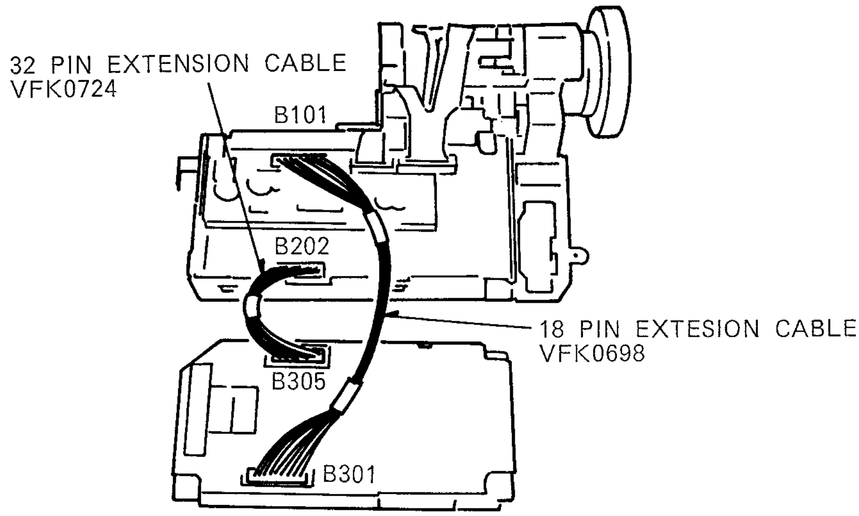

32 PIN EXTENSION CABLE
VFK0724
B101
B202
18 PIN EXTESION CABLE
VFK0698
B305
B301

Fig. T4

4. How To Replace 0.5mm pitch IC.

(Required tools)

- * Spot Heater: (HS–600,etc) or cordless soldering – iron: (80AEX,etc) (HOT Blowing type)
- * Blower Nozzle for spot Heater: (HS–611.614 615.618,etc)
- * Tweezers
- * Paper tape (Non–flammable Type)
- * Glue (paper glue,etc, to fix IC momentary)
- * Soldering sucker. (De–solder braid)
- * 0.3mm diameter solder
- * Solder flux
- * Special soldering iron (HS–11,etc) (sharp tip pencil type). (Removal)

(1) Stick the paper tape around the IC for protection of chip components when hot air is blowed.
(2) Blow the hot air from upright position to the legs of IC using spot heater (attaching suitable nozzle).
(3) When solder is melting, pick up the IC using tweezers.
(4) Take paper tape out from C.B.A.

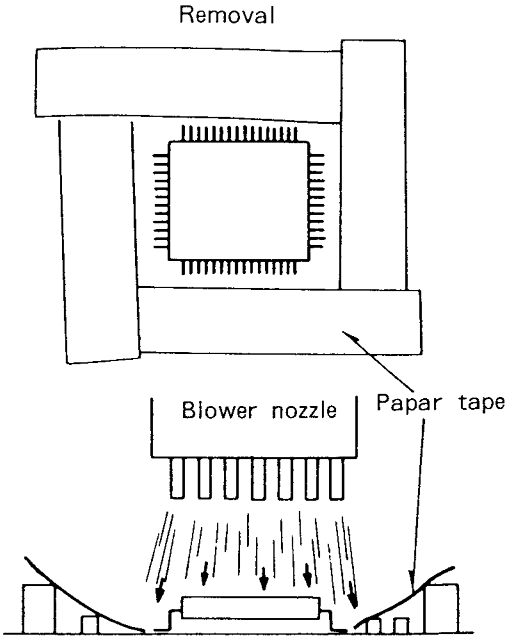

Removal
Blower nozzle
Papar tape

Fig. T5 Removal of IC

(Assemble)

1) Remove the solder which is remained on the round of IC using solder sucker. (De–Solder braid).
2) Attach the glue little bit on the centre of IC round.
3) Put the new IC on to round and align the position of each pins with round.
4) Solder the 2 pins of opposite angle of IC with 0.3mm solder and confirm the position.
5) Solder the all pins of IC with 0.3mm solder and 0.3mm tip solder iron.
6) Confirm if all pins are connected.
7) If solder becomes bridge as shown in Fig. T7 correct the solder using solder sucker (De–solder braid).

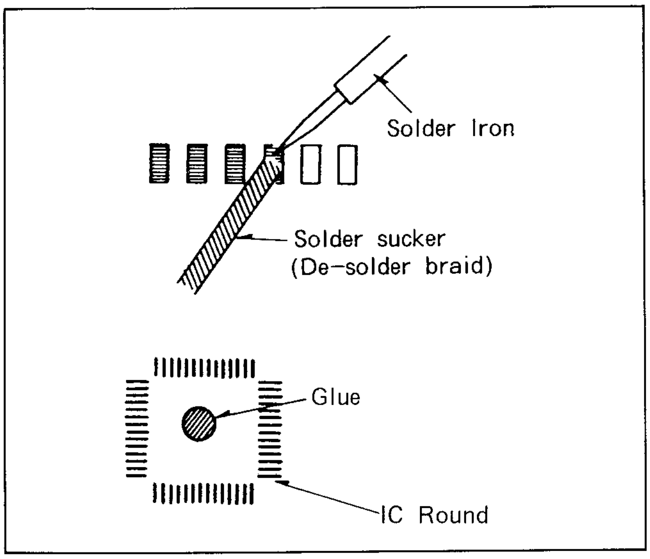

Solder Iron
Solder sucker
(De–solder braid)
Glue
IC Round

Fig. T6 Cleaning the remained solder

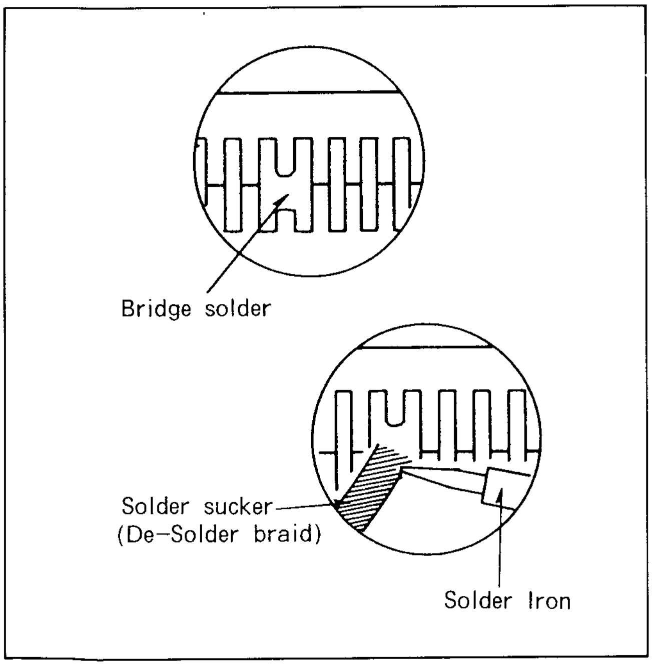

Bridge solder
Solder sucker
(De–Solder braid)
Solder Iron

Fig. T7 Correcting bridge solder

5. How To Replace Capacitor. (New)

1) Heat the one side of capacitor with solder Iron. and push its one side up by finger.
2) Remove one side of leg.
3) Heat the opposite side of capacitor and remove it.
4) When replacing new capacitor put the capacitor and solder it as conventional.

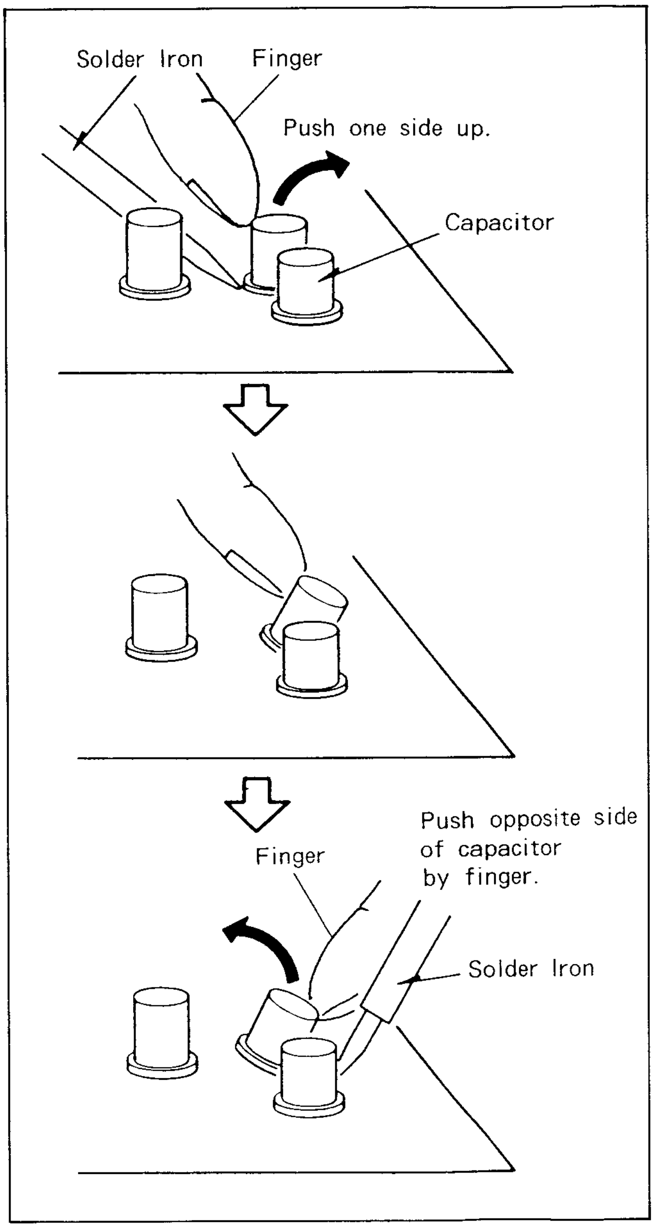

Solder Iron
Finger
Push one side up.
Capacitor
Finger
Push opposite side of capacitor by finger.
Solder Iron

Fig. T8

6. How to Eject Manually.

(1) In Case that Tape is fully unloaded.

* Remove the cassette cover and push the "A" position as shown in Fig. T9.
(Eject Lever: under the garage. Flame).

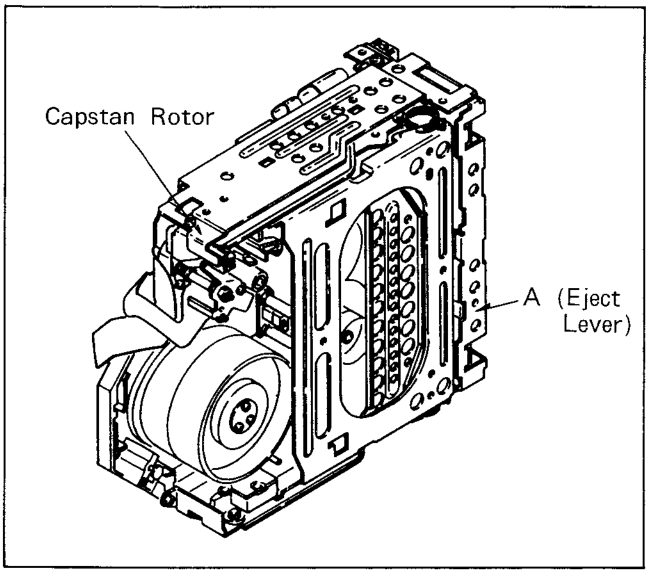


Fig. T9

(2) In Case that Tape is not rewound Completely but mechanism is fully unloaded.

* Remove the Lens Hood, side case (L) Lens Cover, Front case U.
(Please Refer to Disassembly procedures.)

* Rotate the capstan Rotor until tape is rewound.
(Please Refer to Fig. T9)

(3) Eject it as procedure (1).

(4) In Case that Tape and mechanism are still loading condition.

* Remove the cabinet parts.

* Supply DC voltage (1.5V) to loading motor terminal and make it unloading.

* Befor comple unload, Please release the DC Voltage

* Rotate the capstan Rotor until tape is rewound.

* Supply DC Voltage again for make it unloading.

* Eject it as procedure (1)

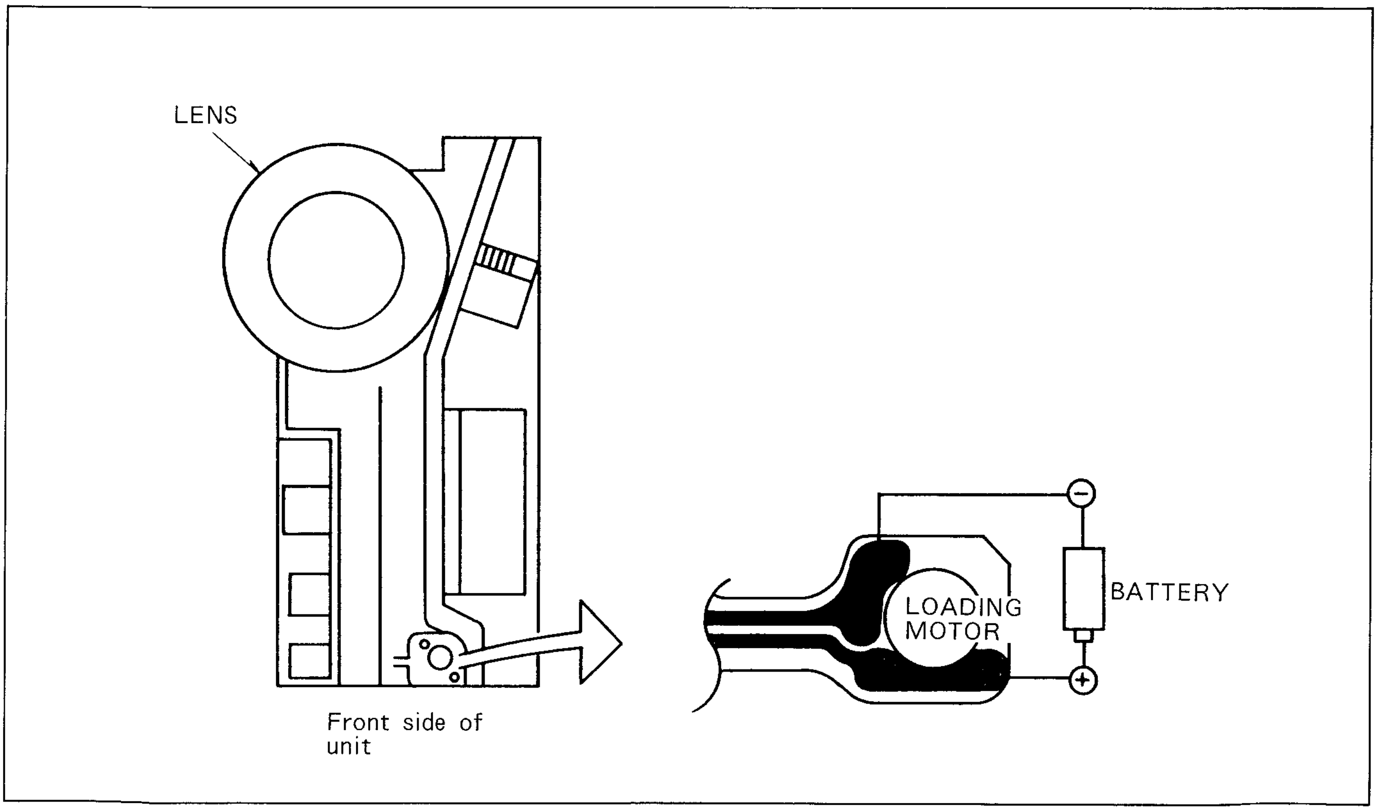


Fig. T10

7. Self-diagnostic system and Service test mode.

7-1. General

NV-S6/S600 has a system self-diagnoses program which faclitates quick trouble shooting.
Pressing the DATE/TIME SET, M/RESET and DATE/TIME keys simultaniously switches the unit into Service Mode.
Service Mode datas are displayed on the EVF as shown in Fig. T13.

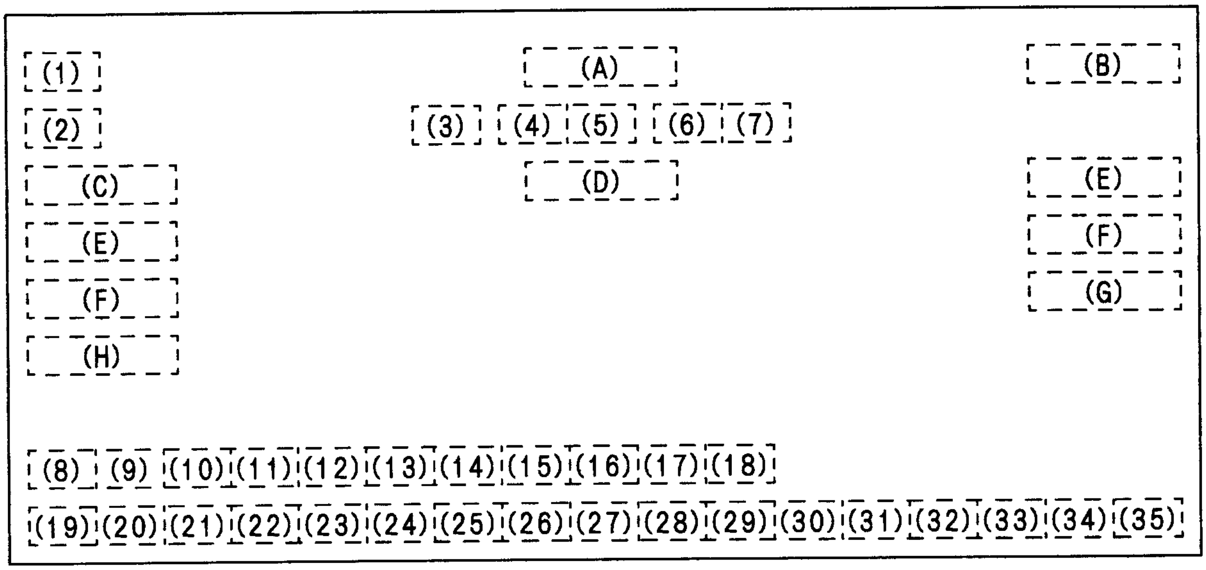


Fig. T-13

7-2. Discription for the Service Mode data

Displayed Data at area (A) to (H) displays usual data. Displayed Data at area (1) to (25) shows each Service Mode data.
Displayed Service datas are Hexadecimal number (Except data at area (2)).
How to read these datas are shown in Fig. T14~T34.

(1) Information of area (1) and (2).

Area	Description
(1)	BATTERY INFORMATION (Double digit: EX, "9A")
(2)	Displayed "SE1" (Shows Service Mode)

Fig. T14

(2) Information of area (3)

INDICATION CONTENTS	0	1	2	3
CASSETTE SW up: 0 down: 1	0	1	0	1
SAFETY TAB SW WITH TAB: 1 WITHOUT TAB: 0	0	0	1	1

Fig. T15

Example:
Data of area (3) is displayed "3".
Cassette sw: 1 (UP)
Safety tab sw: 1 (WITH TAB)

(3) Information of area (4)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LOADING LOCK DETECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CYL LOCK DETECT	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
T • REEL LOCK DETECT	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
S • REEL LOCK DETECT	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL CONDITION 1: WARNING CONDITION

Fig. T16

(4) Information of area (5)

Area	ITEM	DESCRIPTION
(5)	DEW	8: DETECT 0: NORMAL

(5) Information of area (6)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
UNLOADING COMMAND OUTPUT: 1 NO: 0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
TAPE END DETECT	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
BEGINING OF TAPE DETECT	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
POSITION CHATTERING	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL CONDITION 1: WARNING CONDITION

Fig. T17

(6) Information of area (7)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CYL ON COMMAND	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CAP ON COMMAND	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
CAP REV COMMAND	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
LOADING COMMAND	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NO OUTPUT 1: OUTPUT

Fig. T18

(7) Information of area (8) and (9)

※(8) and (9) shown same Information.

Indication	Key operation	Indication	Key operation
00	STOP	06	REC/REV
01	EJECT	07	STOP2
02	REW	08	PLAY
03	FF	09	STILL
04	REVIEW	0A	REC
05	CUE	0B	REC/PAUSE

Fig. T19

(8) Information of area (10) and (11)
NOT USED

(9) Information of area (12)

Area	ITEM	DESCRIPTION
(12)	EJECT SW ON	01

Fig. T20

(10) Information of area (13) to (18)

※ If each data is out of spec., around IC6001 has some Problem.

Area No.	ITEM	Data
(13)	Battery A/D data	"7X"~"AX"
(14)	Battery reference A/D data	"7X"~"8X"
(15)	DEW sensor A/D data	usall: "00" DEW: Except "00"
(16)	T side Photo Tr A/D data	00
(17)	S side Photo Tr A/D data	00
(18)	Button Type Battery A/D data	"00"~"D0"

Fig. T21

(11) Information of area (19)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Position SW 3 ON	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Start/STOP	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Auto Date Set	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Auto Date Set	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T22

(12) Information of area (20)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Power SW	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Camera/VTR Camera: 1 VTR: 0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Position SW 1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Position SW 2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T23

(12) Information of area (21)

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Counter RESET	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
REW	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
STOP	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
FF	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T24

(13) Information of area (22)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HIGH SPEED Zoom	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
SANP SHOT REC	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T25

(14) Information of area (23)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Remaining Tape Time select (0:30″, 1:45″)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
PLAY	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
STILL	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
SP/LP (1: SP, 0: LP)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T26

(15) Information of area (24)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TELE	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
WIDE	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T27

(16) Information of area (25)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DIGITAL EFFECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T28

(17) Information of area (26)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DIGITAL ZOOM	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
DIS	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T29

(18) Information of area (27)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DIGI. MEMO ON	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
DIGI. MEMO. MEMORY	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
DIGI. MEMO. MODE	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T30

(19) Information of area (28)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
FADE	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
DATE/TIME	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T31

(20) Information of area (29)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
FOCUS	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
BLC	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
CAMERA MODE (1: AUTO)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T32

(21) Information of area (30)

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
WHITE BALANCE	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
SHUTTER SPEED	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL 1: PUSH (KEY IN)

Fig. T33

(22) Information of area (31) to (34)

Area	ITEM	DESCRIPTION
(31)	SAFETY. TAB	1: WITH TAB 0: WITH OUT TAB
(32)	POWER	8: DC 0: BATTERY
(33)	NOT USED	0
(34)	CASSETTE	1: UP 0: DOWN
(25)	NOT USED	00

Fig. T34

8. HOW TO CHECK DIGITAL CIRCUIT (PROCESS) (Using Ramp Generator)

1) Checking Principle.

It is rather easy to check the digital circuit if ramp signal (sawtooth signal) can be supplied to input of A/D Converter (IC301–19).
Because output of A/D Converter is specified as shown below.

Beside A/D Converter (IC301) output, all digital IC's input and output signals become specified pulses, which are mentioned in schematic diagram of process.
Therefore, you can ckeck the almost all data lines easily when ramp signal is supplied to A/D Converter input.

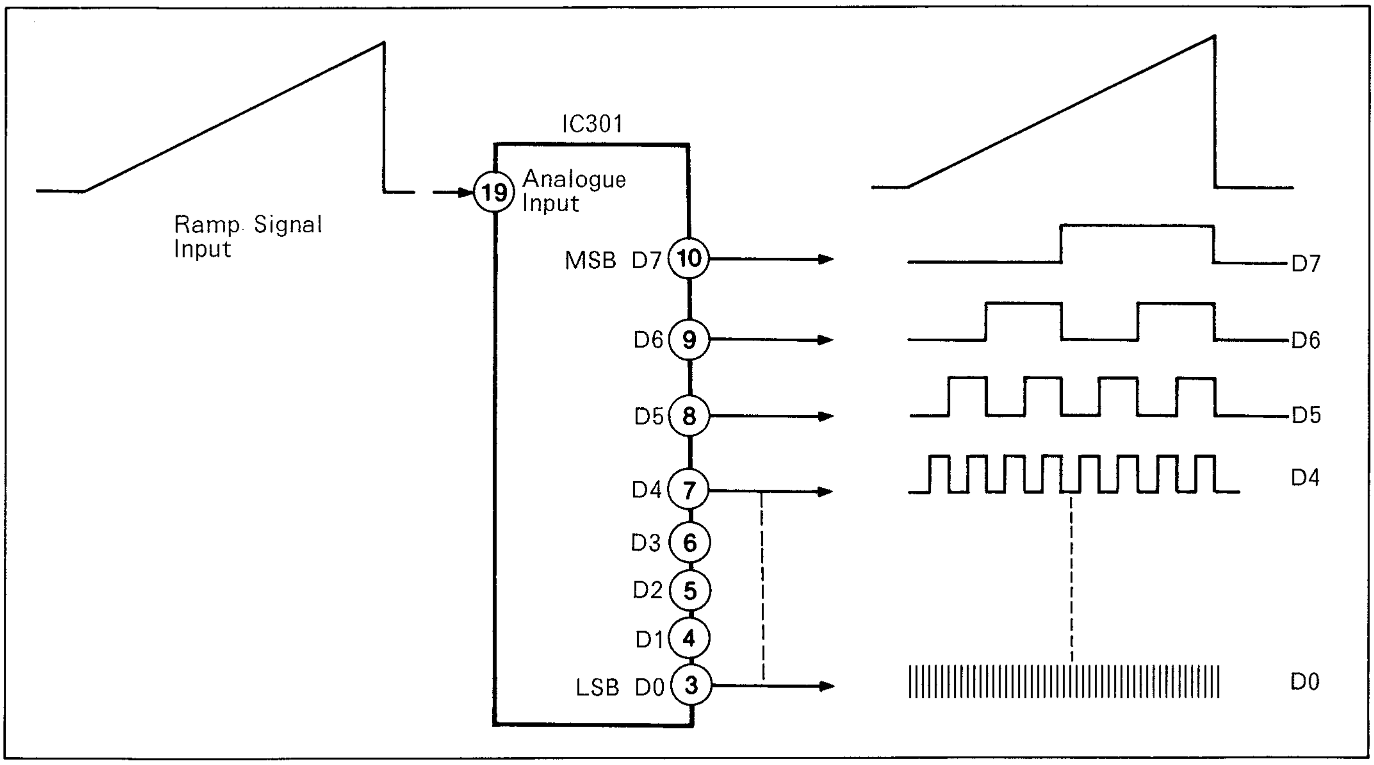
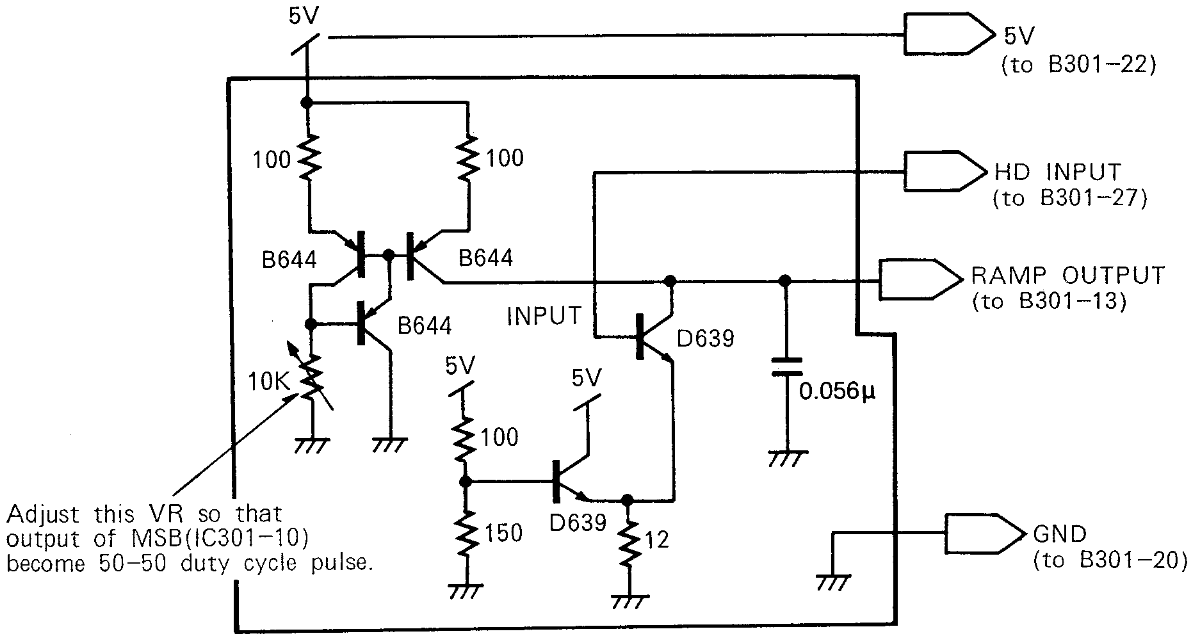

Ramp Signal Input
IC301
19
Analogue Input
MSB D7 10
D6 9
D5 8
D4 7
D3 6
D2 5
D1 4
LSB D0 3
D7
D6
D5
D4
D0

Fig. T35

2) How to Connect ramp generator.

In order to produce ramp signal which is synchronising with HD(horizontal drive) of camera, the following circuit(ramp generator) has been developed (for service purpose).
Let's make it and connect it to process board as hsown in Fig. T36, 37.

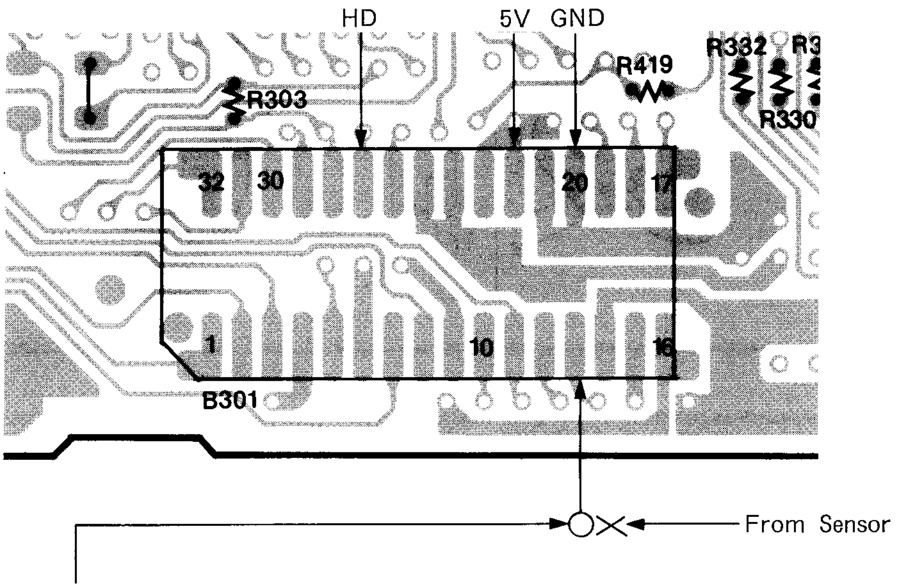

5V
5V
(to B301-22)
100
100
HD INPUT
(to B301-27)
B644
B644
RAMP OUTPUT
(to B301-13)
B644
INPUT
D639
5V
5V
10K
0.056µ
100
150
D639
12
GND
(to B301-20)

Adjust this VR so that output of MSB(IC301-10) become 50-50 duty cycle pulse.

ITEMS	VALUE	PCS
RESISTOR		
ERDS2TJ120	**12ohm**	**1**
ERDS2TJ101	**100ohm**	**3**
ERDS2TJ151	**150ohm**	**1**
VARIABLE RESISTOR		
EVNDRAA00B14	**10Kohm**	**1**
TRANSISTOR		
2SB644	**PNP**	**3**
2SD639	**NPN**	**2**
CAPACITOR		
ECQB1H563JH	**0.056µ**	**1**

Fig. T36

PROCESS & AUTO FOCUS C.B.A.


HD
5V
GND
R303
R419
R332
R3
R330
32
30
20
17
1
10
16
B301
From Sensor

output of Ramp Generator
(Cut the wire of extension cable (Pin 13)
and connect the output of Ramp Genarator)

Fig. T37

9. Ho w to use the Camera Holder
   - * Camera Holder (VFK0382)
   - * Screw (XQN2+CF4)

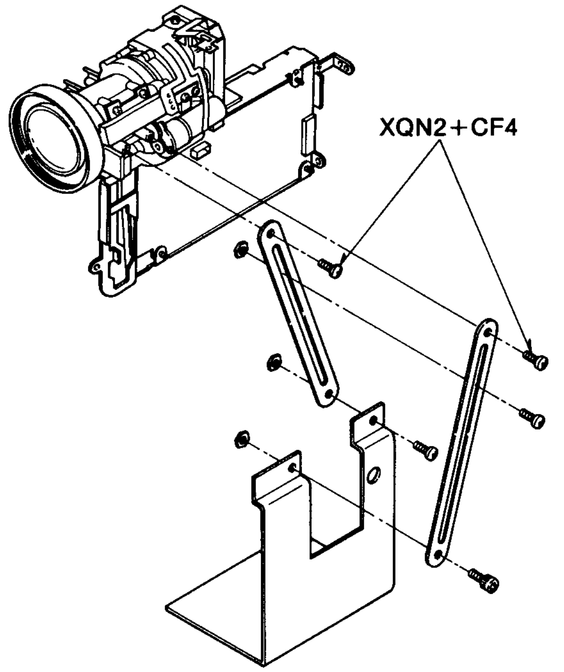


Fig. T38

Controls and Functions

1 **Operation Switch [OPERATE]**

Set this switch to "CAMERA" for shooting.
Set it to "VTR" for playback.
To turn the Movie Camera off, set it back to the centre "OFF" position.
("VTR" means Video Tape Recorder.)

2 **Operation Lamp**
It lights up when the Operation Switch is set to "CAMERA" or "VTR".

3 **Cassette Eject Button [EJECT]**
Press this button to open the cassette compartment.

4 **Viewfinder**
The subject in front of the camera can be seen on the viewfinder screen. Superimposed on the picture are indications about the operation and condition of the Movie Camera.
To be able to see the picture on the viewfinder screen with maximum magnification during shooting and playback, pull on the plastic ring behind the Eyecup to extend the Viewfinder.
The Viewfinder can be turned upward from its horizontal position by up to 90°.

5 **Shoulder Strap Holders**
Attach the Shoulder Strap to these two holders.

6 **Eyepiece Corrector Ring**
Turn it clockwise or counterclockwise so that the indications in the Viewfinder are clearly focused.

7 **Eyecup**

8 **Snapshot Button [SNAPSHOT REC]**
Press this button for shooting a still picture for approx. 5 seconds.
To be able to press this button, the Movie Camera must be in the shooting pause mode ([OPERATE] Switch is set to "CAMERA").

9 **Zoom Button [W] and [T]**
Press the [W] Button lightly to zoom out gradually to the wide-angle position for panoramic shots; press the [T] Button lightly to zoom in gradually to the telephoto position for close-up shots of distant subjects.

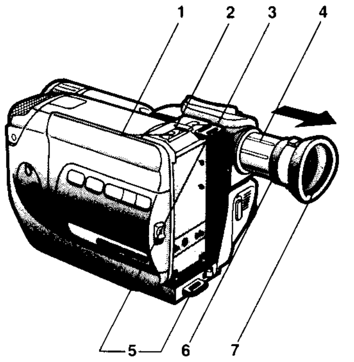
For faster zooming, press the [W] or [T] Button more strongly

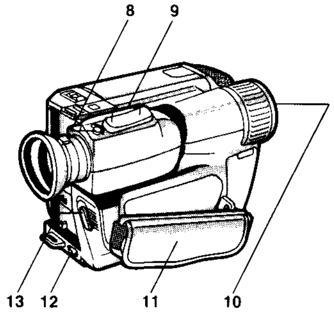
10 **Lens Cap**
The Lens Cap protects the Lens.
Be sure to remove the Lens Cap before starting to shoot.

11 **Grip Belt**
Adjust the length of this belt so that the grip fits comfortably into the palm of your hand.

12 **Battery Pack Eject Lever [BATT.EJECT]**
Slide this lever to the right to remove the Battery Pack.

13 **Start/Stop Button**
Press this button to start shooting a scene. (It is not necessary to keep it pressed during shooting.) Press it again to finish shooting the scene and change the Movie Camera back to the shooting pause mode.





Controls and Functions (cont'd)

14 **Stereo Microphone**
On the Hi-Fi sound track, stereo sound will be recorded.
The two-way microphone is highly effective for recording interviews with the local ambience as well as narrations and music.

15 **External Microphone Socket**
If you want to use an external microphone, connect it to this socket (in this case, the built-in microphone will be deactivated).

16 **Digital Effect Button [EFFECT]**
Use this button for the following 3 operations.
Pressing this button repeatedly changes the operation mode in the following order:
1) For still picture shooting: Press once.
2) For strobe picture shooting: Press twice.
3) For mirror picture shooting: Press three times.
4) To return to normal shooting: Press one more time.

17 **Digital Zoom Button [ZOOM]**
Press this button to increase the power of the zoom function.
1) For zooming with up to 12-time enlargement: D.ZOOM 1
2) For zooming with up to 36-time enlargement: D.ZOOM 2

The picture can be enlarged by up to 12 or 36 times compared with the maximum wide-angle setting of the zoom lens in the normal zoom mode.

18 **Digital Image Stabilizer Button [STABILIZER]**
Press this button when you are shooting on the move, from a vehicle for example.

19 **Cassette Compartment**
Insert a VHS C or S VHS C compact video cassette into this compartment.

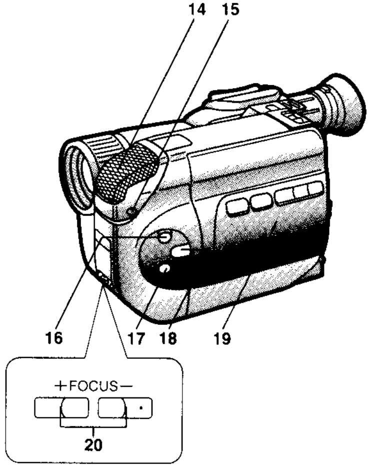
20 **Focus +/− Buttons [FOCUS +/−]**
After selecting the manual focusing mode with the [FOCUS] Button, adjust the focus to the desired subject by pressing these buttons.

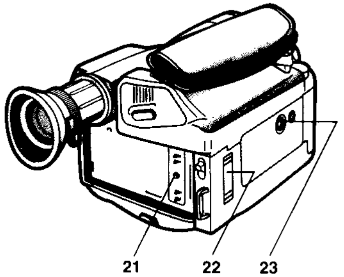
21 **DC Input Socket**
When using the AC Adaptor or the Car Battery Cord (optional) as power supply instead of the Battery Pack, connect the DC Input Cable to this socket.

22 **Button Type Battery Holder**
It holds the Button Type Battery (CR2032) that maintains the clock operation and keeps the title in memory while the Movie Camera is turned off.

23 **Tripod Receptacle**
When using a tripod for stable shooting, attach the screw of the tripod to this receptacle.

Note:
When attaching a non-Panasonic brand tripod, ensure that the length of the mounting screw is no more than 7 mm, to avoid damage to the Movie Camera.





Controls and Functions (cont'd)

24 **Fade Button [FADE]**
Press this button to fade out a scene and to fade in the following scene for a soft scene-to-scene transition.

25 **Date/Time Button [DATE/TIME]**
Press this button to make the time and/or date appear in the Viewfinder and superimpose them onto the picture during shooting.

26 **Title Button [TITLE]**
Press this button to make the memorised title appear in the Viewfinder; press it again to clear it from the Viewfinder. Pressing this button repeatedly will make the title appear, disappear, appear in the Viewfinder.

27 **Memory Button [MEMORY]**
Press this button to input a title into the memory.

28 **Title/Mode/Colour Selector Button [T.MODE/COLOUR]**

- After making the memorised title disappear from the Viewfinder...
  Press this button to select the "WIPE ↓" "WIPE ↑" or "SCROL" superimposing mode for the memorised title instead of the normal superimposing mode.
- After making the memorised title appear in the Viewfinder...
  Press this button to select the colour in which you want the memorised title to be superimposed onto the picture. You can choose any of 8 colours available.

29 **Mode Selector Switch [AUTO/MANUAL]**

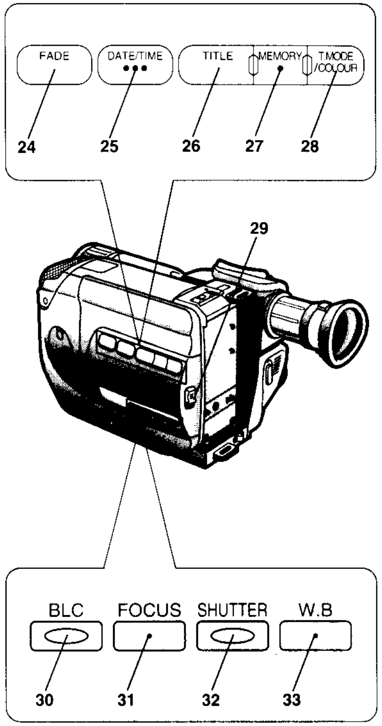
Set this switch to "AUTO" for almost any shooting condition. Set this switch to "MANUAL" when any of the following functions need to be set or selected manually;
- The Backlight Compensation Function
- The Focus Adjustment Function
- The High Speed Shutter Function
- The White Balance Adjustment Function

30 **Backlight Button [BLC]**
Press this button to brighten up the subject when shooting a backlit scene. By pressing it repeatedly, the degree of backlight compensation can be varied in three steps.

31 **Focus Button [FOCUS]**
Press this button to select manual focus adjustment for shooting.

32 **Shutter Speed Selector Button [SHUTTER]**
Press this button to select a higher shutter speed when shooting scenes with fast movements.

33 **White Balance Button [W.B]**
Press this button to select manual white balance adjustment for shooting.



Controls and Functions (cont'd)

34 **Tracking/Date/Time Shift Button [DATE/TIME SHIFT • TRACKING]**
Use this button for the following operations:
1) Press it to advance to the next item during the setting of the time and date.
2) Press it when you want to adjust the tracking manually.

35 **Recording Speed Selector Switch [SP/LP]**
Set this switch to select the desired tape speed. (SP/LP)

36 **Pause Button [PAUSE]**
Press this button during playback to be able to watch a still picture; press it again to resume normal playback.

37 **Stop Button [STOP]**
Press this button to stop the playback.

38 **Rewind/Review Button [REW/⏪]**
Use this button for the following operations:
1) With the [OPERATE] Switch set to "CAMERA":
   Press it briefly after shooting a scene in order to play back the last few seconds of the recording for quick confirmation that the recording is okay. When this button is kept pressed, the recorded scene is played back at high speed in reverse direction.
2) With the [OPERATE] Switch set to "VTR";
   Press it to rewind the tape from the stop mode.
   Keep it pressed during playback for high-speed playback in reverse direction.

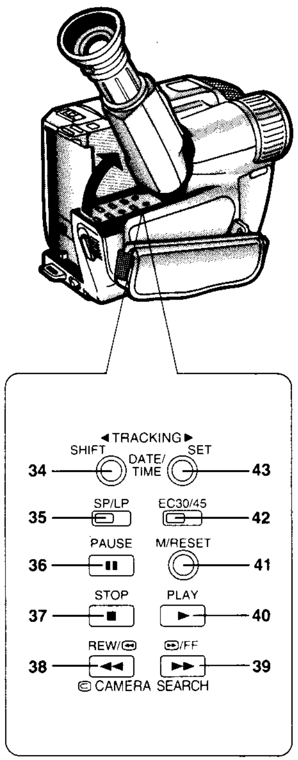
39 **Fast Forward/Cue Button [⏩/FF]**
1) With the [OPERATE] Switch set to "CAMERA":
   When this button is kept pressed, the recorded scene is played back at normal speed in forward direction.
2) With the [OPERATE] Switch set to "VTR";
   Press this button to wind the tape forward at high speed from the stop mode.
   Keep it pressed during playback for high-speed playback in forward direction.

40 **Play Button [PLAY]**
Press this button to start the playback.

41 **Memory Reset Button [M/RESET]**
Use this button for the following operations:
1) Press this button for more than one second to reset the tape counter to "0:00.00".
2) Press this button briefly (for about 0.5 seconds) to activate the tape counter memory function so that the tape position corresponding to the tape counter indication "M 0:00.00" can be found easily during fast-forwarding or rewinding of the tape.

42 **Remaining Tape Time Selector Switch [EC30/45]**
Set this switch to select the length of the cassette tape that is used for shooting or playback.

43 **Tracking/Date/Time Set Button [DATE/TIME SET • TRACKING]**
Use this button for the following operations:
1) Press it to change the figures during the setting of the time and date.
2) Press it when you want to adjust the tracking manually.



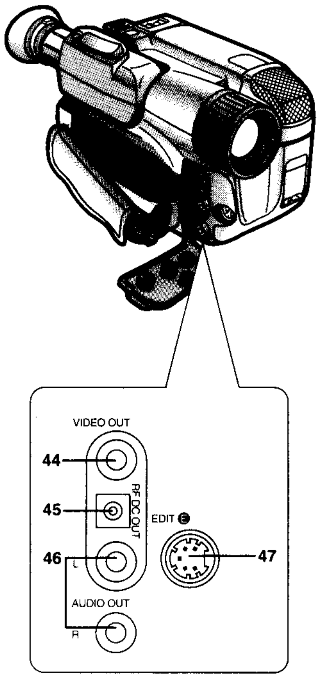
Controls and Functions (cont'd)

44 Video Output Socket
Connect this socket via AV Output Cable to the video input socket of the TV set (or the RF Adaptor) for playback directly from the Movie Camera.

45 RF DC Output Socket
Connect this socket with the RF Adaptor to supply it with power for playback directly from the Movie Camera.

46 Audio Output Sockets
Connect this socket via audio cable with the audio input socket of the TV set (or the RF Adaptor) for playback directly from the Movie Camera.

47 Edit Socket
Connect an Editing Controller, or some other accessory to this socket.



Using the Battery Pack

1) Charge the Battery Pack

1 **Insert the upper end of the Battery Pack into the connector on the AC Adaptor as shown in the illustration.**

2 **Press the rear portion down until it locks with a click.**

3 **Connect the Power Cable of the AC Adaptor to the mains.**
- The Power Lamp ❶ lights up and several seconds later the Charging Lamp ❷ lights up, too.

Note:
When charging the Battery Pack, disconnect the DC Input Cable from the AC Adaptor.

■ Charging Time and Maximum Time for Continuous Shooting

Battery Pack No.	VW-VBS1E VW-VBR1E	VW-VBS2E VW-VBR2E	VW-VBH1E	VW-VBH2E
Charging time in minutes	60	120	80	160
Max. shooting time in minutes	50	100	60	120

- The Battery Pack supplied with this Movie Camera is the model VW-VBS1.

Charging Indication Lamp:
This lamp lights up when the charging is started.
Even after this lamp goes out, the charging should be continued for at least two more hours to obtain maximum charge.

Operation Time:
With a fully charged Battery Pack (VW-VBS1E), the Movie Camera can be used (in record mode only) continuously for approx. 50 minutes at 25°C. However, depending on how often the various functions listed below are used, and depending on the shooting conditions, the actual operation time may be considerably shorter.
- Shooting start/stop
- Auto focus
- Zoom function
- Playback, fast forward, rewind, and other operations
- Digital functions, e.g. image stabilizer
- Use of the Movie Camera in low temperature

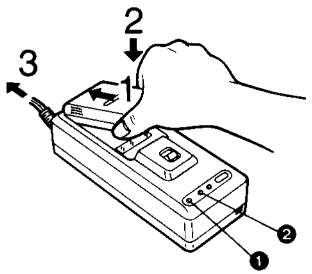
Therefore, it is recommended to take along a charged spare Battery Pack.

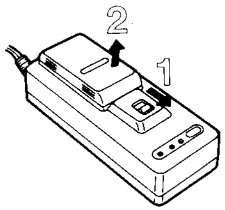
■ To Eject the Battery Pack...

1 **Slide the Battery Eject Lever in the direction of the arrow and...**

2 **Remove the Battery Pack.**

Notes:
The Battery Pack is shipped in discharged condition and must be charged before it can be used.
- Charge the Battery Pack within a temperature range of 10°C–35°C.





Using the Battery Pack (cont'd)

■ How to Use the Covenient Discharge→Charge Function

If a Battery Pack is recharged repeatedly in not completely discharged condition, the so-called "memory effect" will occur, and the operation time of the recharged Battery Pack will gradually become shorter. Therefore, it is recommended to regenerate the Battery Pack after approx. every fifth recharging by using the convenient Discharge→Charge Function.

1 **Attach the Battery Pack to the AC Adaptor.**

2 **Connect the Power Cable of the AC Adaptor to the mains.**
- The Power Lamp ❶ lights up, and soon after, the Charging Lamp ❷ lights up.

3 **Press the Discharge→Charge Button for more than 1 second.**
- The Discharge Lamp ❸ lights up, and the Charge Lamp ❷ goes out.

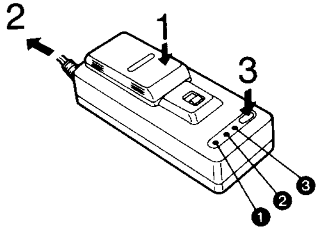
■ **When the discharging is finished**, the Charge Lamp ❷ lights up instead, and the charging starts.

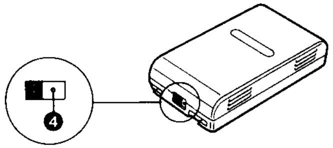
■ **When the charging is completed**, the Charging Lamp ❷ goes out.

Notes:
- To optimise the life of the Battery Pack, it is recommended to charge the Battery Pack model VW-VBS1E for a minimum of 3 hours and model VW-VBS2E for at least 6 hours. This does not include the "discharging time", when using the discharge function.
- When using the Discharge→Charge Function, the charging takes five or six times as long as normal charging.

■ How to Use the Charging Confirmation Marker

This marker makes it convenient to distinguish between charged and discharged Battery Packs. For example, slide the knob so that the dot ❹ is visible to mark a charged Battery Pack, and slide it so that the dot is not visible for a partially or fully discharged Battery Pack.





Using the Battery Pack (cont'd)

2) Attach the Battery Pack to the Movie Camera

■ How to Attach the Battery Pack

1 **Align the mark ❶ at the top of the Battery Pack with that on the Movie Camera ❷ and insert the Battery Pack with its upper part first.**

2 **Attach the Battery Pack until it locks with a click.**

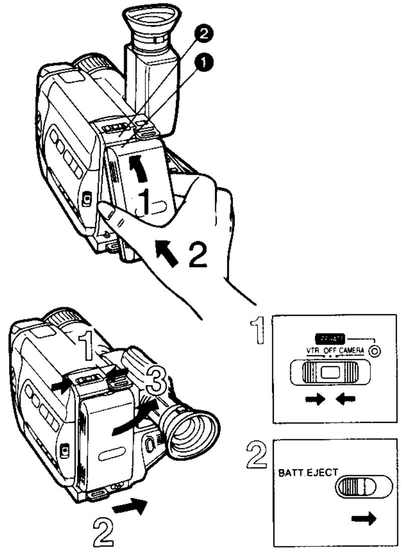
■ How to Remove the Battery Pack

1 **Press and slide to "OFF".**

2 **After the image in the Viewfinder disappears, slide to the right and...**

3 **Pull off the Battery Pack.**
- When the Battery Pack is replaced, the modes previously set with the [BLC], [FOCUS], [SHUTTER] and [W.B] Buttons are cancelled and the Tape Counter Indication is reset to zero.

Caution:
- If the Battery Pack is removed during recording or playback, the tape remains wound around the video head cylinder and could become damaged.
This is also the case during loading and unloading of the tape.



Using the AC Adaptor or the Car Battery Cord (optional)

■ How to Use the AC Adaptor

1 **Connect the DC Input Cable to the DC Input Socket on the Movie Camera.**

2 **Connect the other end of the cable to the DC Output Socket on the AC Adaptor.**

3 **Connect the Mains Cable of the AC Adaptor to the mains.**

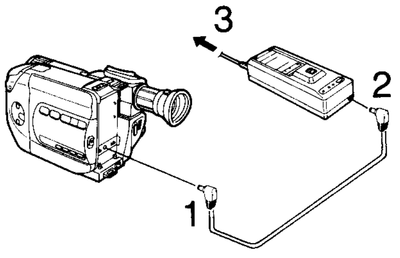
Note:
When the AC Adaptor is used to supply the Movie Camera with power, remove the Battery Pack from the AC Adaptor.

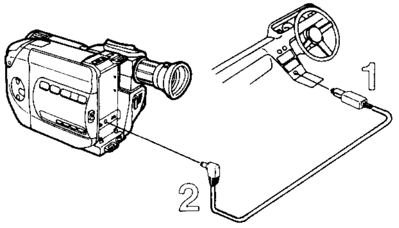
■ How to Use the Car Battery Cord (optional)

1 **Start the engine and then plug the Car Battery Cord into the cigarette lighter socket.**

2 **Connect the other end of the cord to the DC Input Socket on the Movie Camera.**

Notes:
- The Car Battery Cord can only be used with 12 V DC negative-grounded vehicles.
- Do not start the car engine while the Movie Camera is powered by the car battery.





Setting the Clock

1) Insert the Button Type Battery

The "CR2032" size Button Type Battery is necessary for storing the date, time and selected tape speed in the memory, when the Movie Camera is turned off.

1 Turn the Movie Camera upside down.

2 Push the two stoppers ❶ toward each other and pull out the Battery Holder ❷.

3 Install the Battery with the (+) mark facing downward until it locks with a click.

4 Insert the Battery Holder back into the Movie Camera until it locks.

- If the Button Type Battery is not inserted or if it is exhausted, the Indication " ⌧ " in the Viewfinder flashes for approx. 10 seconds when turning the Movie Camera on.

■ How to Exchange the Button Type Battery

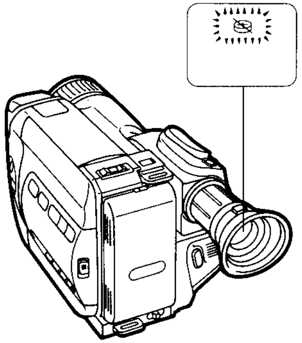
- Use only a "CR2032" size Button Type Battery.
- The CR2032 is manufactured by Panasonic only.

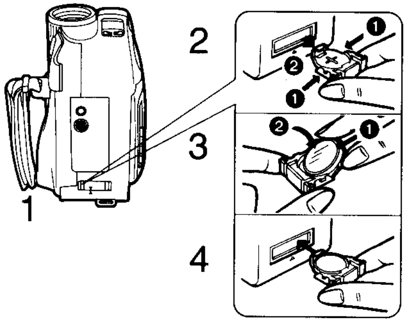
Note:

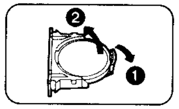
- If the Date and Time Indications in the Viewfinder are no longer correct after replacing the Button Type Battery, set the date and time.

CAUTIONS FOR BATTERY REPLACEMENT

- The life of the battery is about one year. Inspect, and if necessary, replace the Battery once a year.
- Load the new battery with its polarities (+ and −) correctly aligned.
- Remove the spent battery immediately and dispose of it.
- Do not try to short-circuit, recharge or heat the battery and do not throw it into a fire.
- Keep the button-type battery out of reach of children. If a battery has been swallowed, consult a doctor immediately.
- Do not handle the Button Type Battery with metallic tweezers because this could short-circuit it.







Setting the Clock (cont'd)

2) Set the Date and Time

1 Press and slide to "CAMERA".

2 Press.

3 Keep pressed for more than 2 seconds.

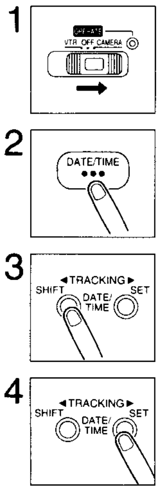
- The year portion ❶ of the Date/Time Indication starts to flash.
- The flashing portion of the Date/Time Indication can be changed with the [SHIFT] Button in the following order:

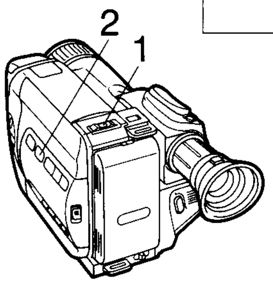
→Year→Month→Day→Hour→Minute→"　　"→

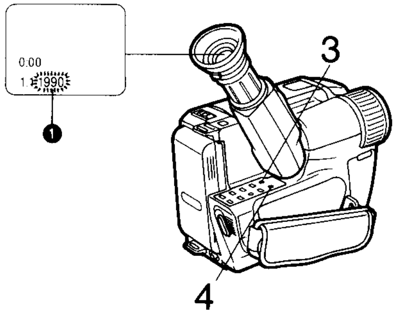
4 Press to change the figures.

Year: **1990**→1991→ .... →2089→**1990**→...
Month: 1→2→ .... →12→1→...
Day: 1→2→ .... →31→1→...
Hour: 0→1→ .... →23→0→...
Minute: **00**→01→ .... →59→**00**→...

- **Repeat procedures 3 and 4 until all items have been set correctly.**
- Once the date and time are set, press the [SHIFT] Button in response to an accurate time source so that the clock begins to function.







Recording the Date and Time during Shooting

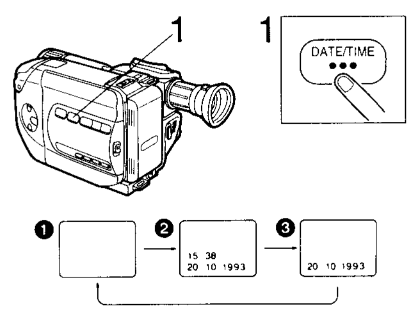
During shooting, the Date/Time Indication displayed in the Viewfinder will also be recorded.

1 Press.

- Pressing the [DATE/TIME] Button repeatedly changes the Date/Time Indication ❷ in the Viewfinder in the following order:

❶ ❷ ❸
15:38
→ No indication → 20.10.1993 → 20.10.1993
date and time
date only

- Press the [DATE/TIME] Button to select the desired indication.



Extending the Viewfinder/Adjusting the Eyepiece Corrector

1 Before shooting, extend the Viewfinder to its fully extended position ❶ (about 2 cm).

Note:
- Do not hold the Viewfinder by the Eyecup because it could become detached from the Viewfinder.

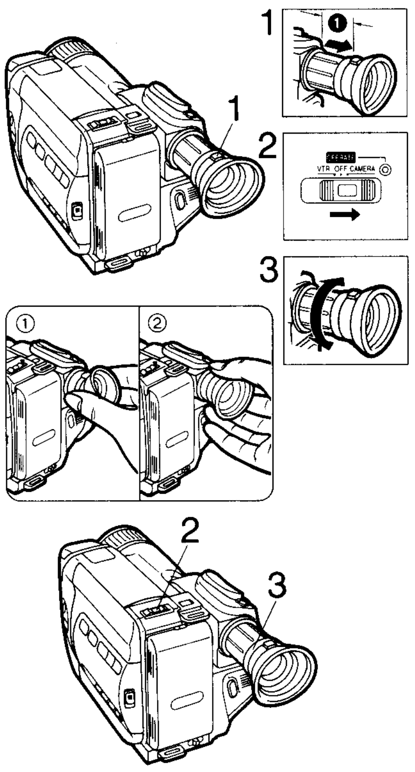
① Wrong

② Correct

2 Press and slide to "CAMERA".

3 Turn the Ring until the indications in the Viewfinder can be seen clearly.
- With the Eyepiece Corrector Control, the Eyepiece can be adjusted to your eyesight.

Note:
- Do not apply pressure to the Viewfinder except when extending, raising, lowering and retracting it.



Adjusting the Grip Belt/Removing the Lens Cap

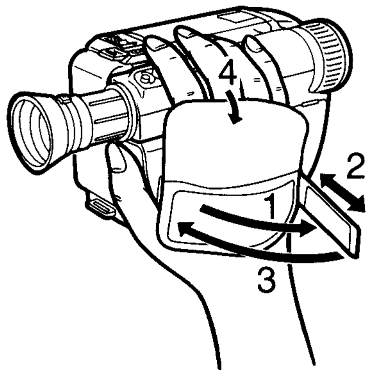
■ Adjusting the length of the Grip Belt
The length of the Grip Belt should be adjusted so that the Grip fits comfortably into the palm of your hand and the Start/Stop Button and the [W] and [T] Zoom Buttons can easily be pressed with the fingertips.

1 Unfasten the velcro tape closure.

2 Adjust the length to the size of your hand.

3 Fasten the velcro tape closure.

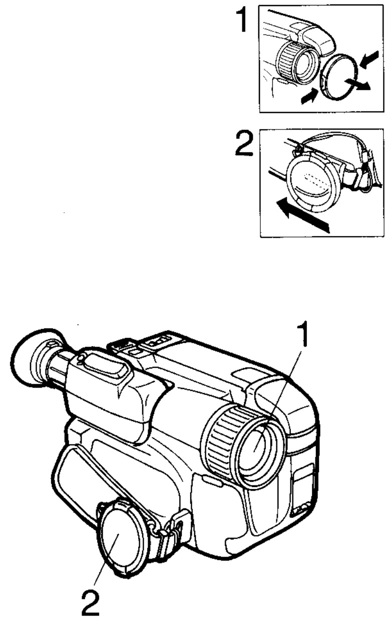
4 Fold the cover down over the Grip Belt.



■ Removing the Lens Cap

1 Press the Stoppers and pull it off.

2 Hook the Lens Cap onto the Grip Belt to prevent it from getting in front of the Lens.



Shooting with the Digital Image Stabilizer Function

This function automatically corrects the slight shaking of the camera that often occurs during hand-held camera shooting and zooming.
It is especially practical for the following shooting situations:
- Zooming in on a distant subject.
- Shooting while walking.
- Shooting from inside a moving car.

1 Press.

The Image Stabilizer Function is activated with the [STABILIZER] Button.
- When the Image Stabilizer Function is activated, the Indications ❶ (Image Stabilizer Indication "✋" and Shutter Speed Indication "1/120") appear in the Viewfinder.

2 Press.

- The recording starts.

■ To Cancel this Function...
Press the [STABILIZER] Button.

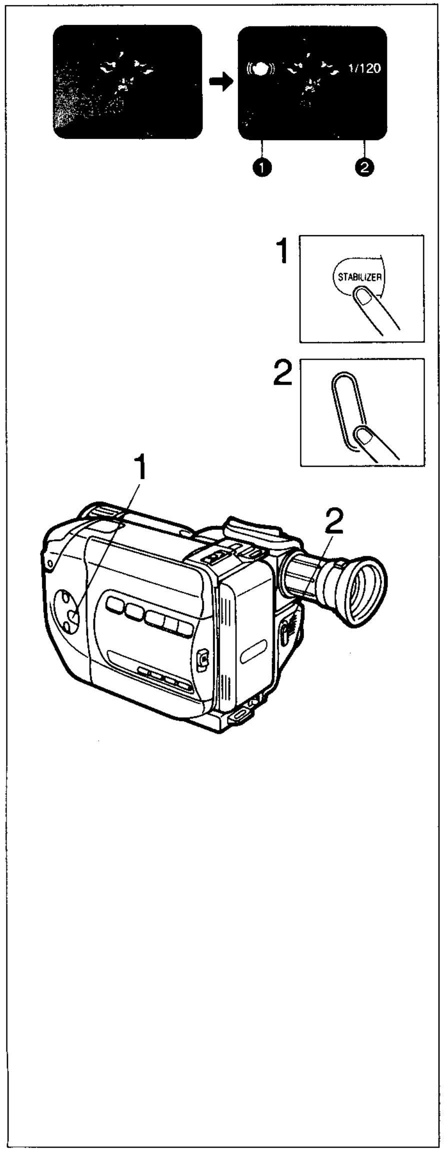
Notes:
- The subject appears slightly enlarged in the Viewfinder.
- The shutter speed is set to 1/120 second (the "1/120" Indication ❷ is displayed in the Viewfinder) instead of the normal 1/50 second (for which there is no indication).
- When shooting under weak illumination, the "✋" Indication flashes to indicate that the Image Stabiliser Function does not work.

Notes on Shooting with the Image Stabilizer Function

■ Shooting Conditions...
- The picture stabilizing effect may not be sufficient, if the shaking of the Movie Camera is very strong, or in the following shooting conditions:
  —A subject with horizontal or vertical stripes.
  —An extremely bright subject.
  —A subject under many fluorescent lamps.
  —A fast-moving subject.
- When shooting under fluorescent light, the brightness of the picture may fluctuate.
- The resolution of the picture will be slightly reduced.

■ Shooting with the High-Speed Shutter...
- When the Image Stabiliser Function is cancelled, the Shutter Speed is reset to 1/50, however if the [SHUTTER] Button is pressed to change the shutter speed while the Movie Camera is in the Image Stabiliser Mode, the shutter speed will remain at this setting when the Image Stabiliser Mode is cancelled.

■ Shooting with a Tripod...
- When shooting with a tripod, do not use the Image Stabilizer Function.



Taking a Snapshot

Using the Digital Shooting Function

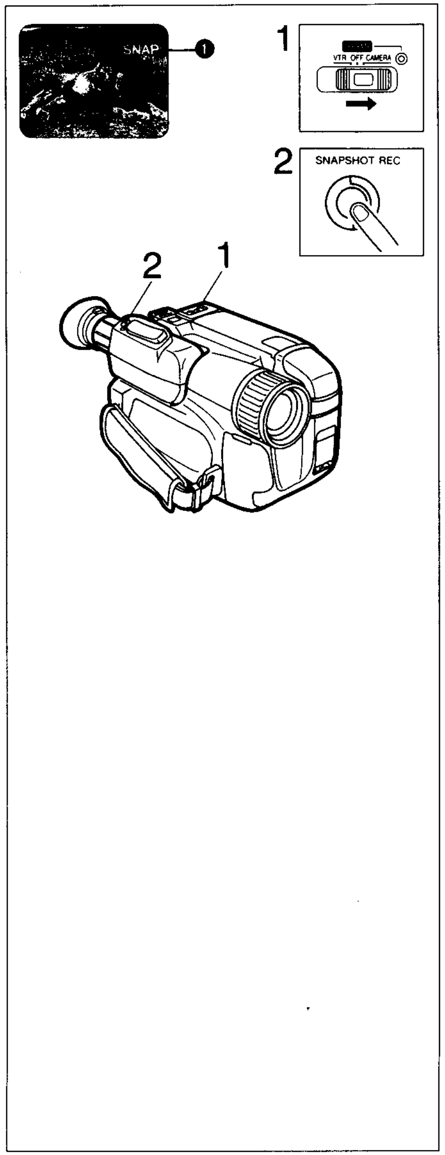
- By pressing the [SNAPSHOT REC] Button, a still picture can be recorded for approx. 5 seconds.
  Since anyone can use this Movie Camera with the same ease as a photo camera, it's easy to ask somebody to take your picture by pressing the [SNAPSHOT REC] Button. This makes it even easier for you to get into your own video movies.

1 Press and slide to "CAMERA".

2 Press.

- During the snapshot shooting, the "SNAP" Indication ❶ is displayed in the Viewfinder.
- The still picture will be recorded for approx. 5 seconds and the Movie Camera will then switch back to the shooting pause mode.

Hints for Shooting Snapshot Pictures
By combining this function with the High-Speed Shutter Function, it is possible to shoot still pictures of fast actions for motion analysis.
- To prevent picture distortion, do not move or shake the Movie Camera during Snapshot Recording.
- Since the still picture is recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.
- When the Snapshot Recording Function is used repeatedly, wait at least 2 to 3 seconds before pressing the [SNAPSHOT REC] Button again.



Shooting a Still Picture

Using the Digital Shooting Function

For Recording a Still Picture of any Desired Duration:

1 Press and slide to "CAMERA".

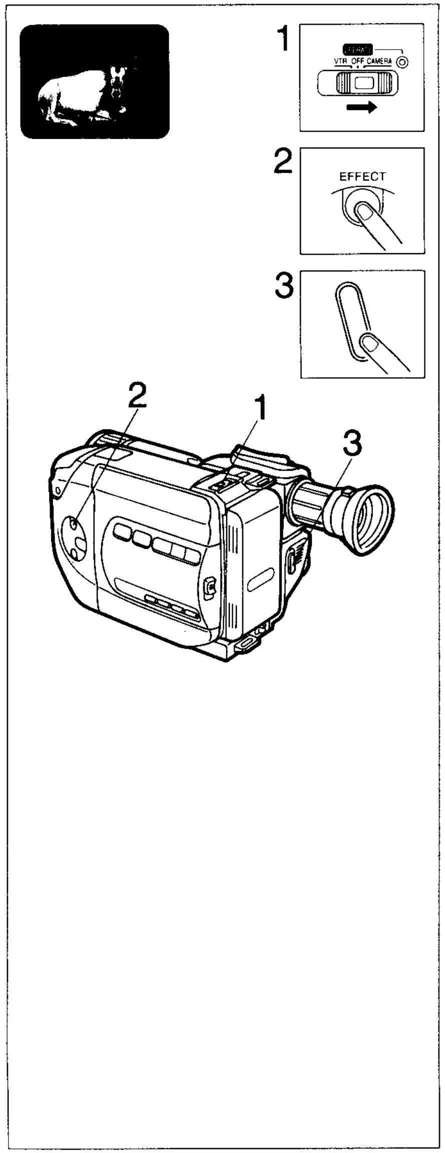
2 Press.
- The image in the Viewfinder stands still.
- By pressing the [EFFECT] Button repeatedly, the mode can be changed in the following order:

→NORMAL→STILL→STROBE→ MIRROR→

3 Press.
- The still picture in the Viewfinder will be recorded.

■ To Cancel this Function...
Press the [EFFECT] Button three times until normal movement in the Viewfinder is observed.

Hints for Shooting Still Pictures
- To prevent picture distortion, do not move or shake the Movie Camera during still picture shooting.
- Since the still picture is recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.



Shooting with Strobe Effect

Using the Digital Shooting Function

For continuously recording 6 still images per second:

1 Press and slide to "CAMERA".

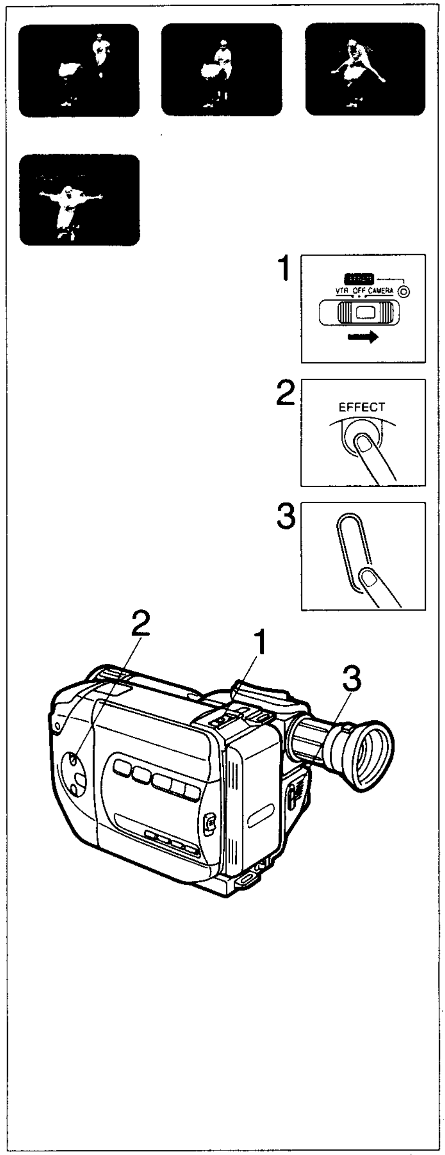
2 Press Twice.
- The picture in the Viewfinder will also have a strobe effect.

3 Press.
- Continuous shooting with strobe effect is now possible.

■ To Cancel this Function...
Press the [EFFECT] Button twice until normal movement in the Viewfinder is observed.

Hints for Shooting Pictures with Strobe Effect
By combining the Strobe Function with the High-Speed Shutter, the strobe effect can be increased. (For outdoor shooting, the 1/250-second shutter speed is recommended.)

Notes:
- When shooting under fluorescent lamps, the brightness of the picture may fluctuate.
- Since the strobe pictures are recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.



Shooting with the Mirror Effect

Using the Digital Shooting Function

When recording a moving picture in the Mirror Mode, the right half of the picture is a mirror image of the left half ❷.

1 Press and slide to "CAMERA".

2 Press three times.

- The right half of the picture ❶ in the Viewfinder is now a mirror image of the left half.

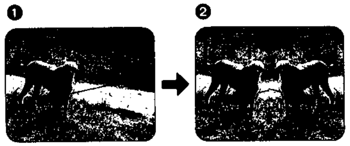
3 Press.

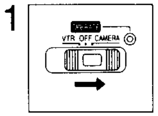
- The mirror image is now being recorded.

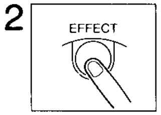
■ To Cancel this Function...

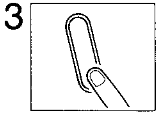
Press the [EFFECT] Button once until normal movement in the Viewfinder is observed.

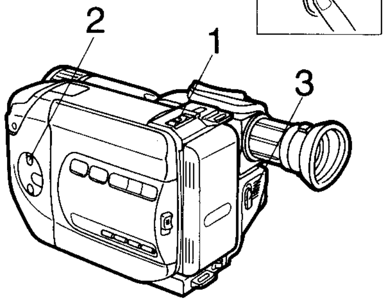
- Since the picture is recorded from the digital memory, the picture quality may be slightly inferior to that of normally recorded pictures.











Shooting with the Zoom Function

Using the Power Zoom Function

To make your zoom shots more impressive and to achieve exactly the desired effect, do it like the professionals: before actually shooting, make a trial run of the zooming.

1 Keep pressed for telephoto.
(subject appears closer ❶)

Keep pressed for wide-angle.
(subject apears farther away ❷)

The zoom speed can be varied in 2 steps.
For faster zooming, press the [W] or [T] Button strongly.
For slow zooming, press either of these buttons lightly.

■ Using the Digital Zoom Function

The digital Zoom Function makes it possible to zoom in on a subject and enlarge it by up to 36 times by using the [ZOOM] Button and the [T] Zoom Button.

3 zoom ranges can be selected as follows.

×1↔×8	No indication.
×1↔×12	"D.ZOOM 1"
×1↔×36	"D.ZOOM 2"

1 Press and select the desired zoom range.

- When the "D.ZOOM 1" Indication ❸ appears in the Viewfinder, the zoom range is expanded to up to ×12.
- When the "D.ZOOM 2" Indication ❹ appears in the Viewfinder, the zoom range is expanded to up to ×36.

2 Press ❺ or ❻.

- The Magnification Ratio Indication is displayed in the Viewfinder.
  The figure corresponding with the selected magnification is displayed and it changes only when the [W] or [T] Button is kept pressed.

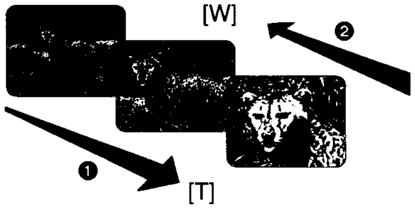
■ To Cancel this Function...

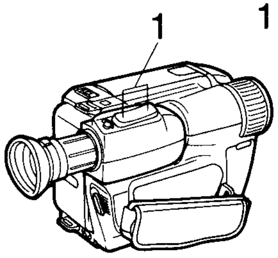
Press the [ZOOM] Button once or twice.

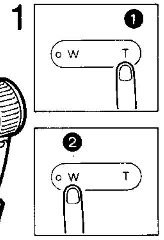
- The "D.ZOOM 1" or "D.ZOOM 2" Indication disappears in the Viewfinder.

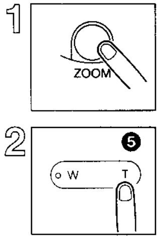
Notes:

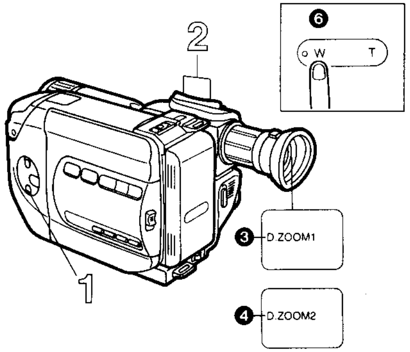
- When the Digital Zoom Function is turned off, the zoom range is limited to ×8.
  However, when the Digital Image Stabilizer Function is activated, the zoom range is extended to up to ×9.
- When the Digital Zoom Function is activated, the picture is magnified electronically.
- The Digital Zoom Function slightly decreases the picture resolution and fine picture details.
- When zooming in on a subject all the way to the maximum tele position, slight after-image distortion may occur.
- When zooming in the extreme tele range (near the 36× setting, using the Digital Zoom) while the Image Stabilizer Function is activated, slight after-image distortion may occur.
  When shooting under very bright conditions, the after-image can be eliminated by selecting a shutter speed of 1/250 or 1/1500 sec.











Shooting Backlit Scenes

This function makes it possible to brighten up the subject when shooting a backlit scene, e.g. people outdoors with the sun in their back, or a person indoors in front of a window.

1 Set the Mode Selector Switch to "MANUAL".

2 Press to select the degree of the backlight compensation according to the backlight conditions.

- The " ⬬ " Indication appears ❷ in the Viewfinder.

By pressing the [BLC] Button repeatedly, the brightness of the picture can be increased in 3 steps.

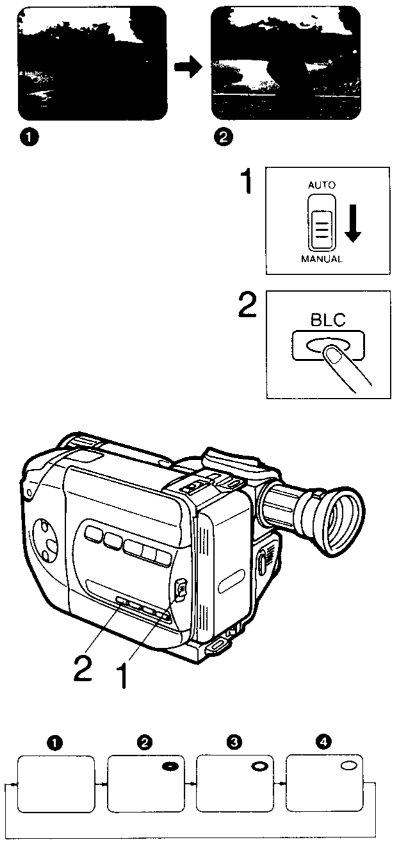
❶ No backlight compensation
↓
❷ Low backlight compensation
↓
❸ Medium backlight compensation
↓
❹ High backlight compensation

■ **To Return to the Standard Iris Setting...**

- Press the [BLC] Button repeatedly until neither the " ⬬ ", " ⭘ " nor " ⬭ " Indication in the Viewfinder is displayed any longer.
- Returning to the standard iris setting is also possible by setting the Mode Selector switch to "AUTO".
  (The Focus, High Speed Shutter and White Balance modes can also be reset to "AUTO" in this way.)

Cautions for Shooting Backlit Subjects

- The sky may become whitish.
- In case of extremely strong backlight, it may not be possible to brighten up the subject sufficiently.
- When shooting with the sun striking the subject at an angle, star shaped figures may be recorded due to reflection of the light.



Shooting Fast-Moving Subjects

Using the High-Speed Shutter Function

A range of different high shutter speeds makes it possible to shoot scenes with fast movements. When scenes recorded with a high shutter speed are later played back on a VTR equipped with super still and super fine slow motion functions, still and slow motion playback with very sharp picture contours and brilliant details can be obtained.

1 Set to "MANUAL".

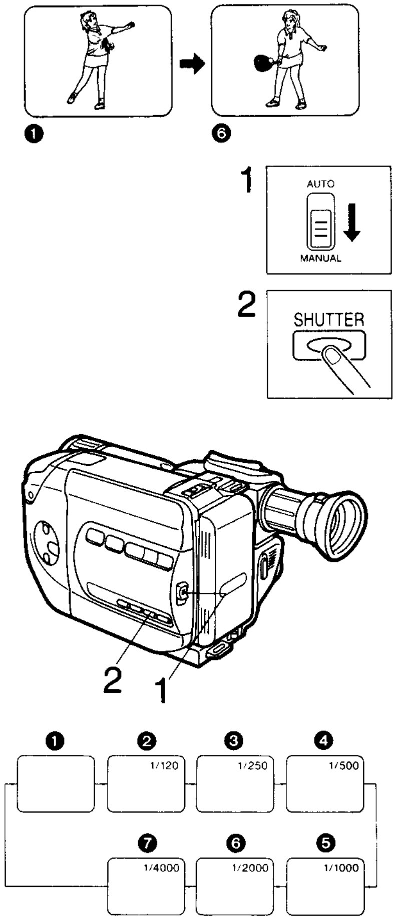
2 Press repeatedly to select the desired shutter speed.

- The shutter speed changes in the following sequence.

❶ 1/50 (No indication) Normal → ❷ 1/120 → ❸ 1/250 → ❹ 1/500
❺ 1/1000 → ❻ 1/2000 → ❼ 1/4000 → ❶ 1/50

Conditions for Shooting with the High-Speed Shutter

- The subject must be brightly lit by sunlight or other strong illumination, with little shade.
- When shooting under fluorescent lamps, the picture will be adversely influenced by flickering.
- When the picture is played back in the normal playback mode, the picture movement may not be as smooth as normally.
- The playback picture will be slightly darker than the picture recorded without using the High-Speed Shutter Function.



Inputting a Title into the Memory

Using the Digital Title Memory Function

- The Digital Title Memory Function makes it possible to input a title into the memory, to recall it later during shooting by pressing a button and to superimpose it onto the normal moving picture.
- Inputting a title into the memory can be performed while the Movie Camera is in the shooting pause mode.

1 Prepare a title.

- The title should have strong contrast (e.g. title written with black felt pen on white paper, printed title, street sign, calendar).

2 Press and slide to "CAMERA".

3 Adjust the focus.

- For small titles, use the Marco Close-up Function.
- The title should be in the centre of the Viewfinder screen because a part at the top and bottom edge of the title image will be cut off when it is superimposed during shooting.

4 Press for at least half a second.

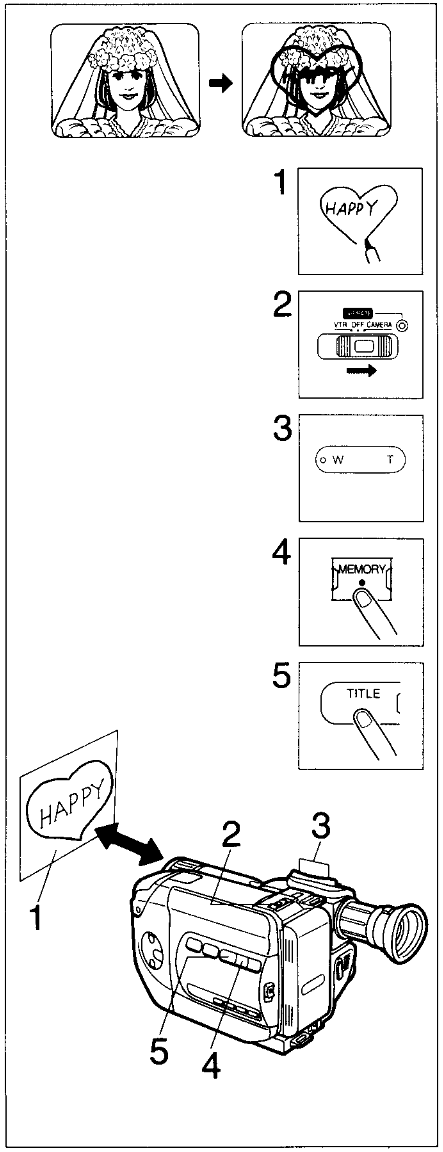
- The title is memorised.

5 Press to make the title disappear from the Viewfinder.

- Pressing this button repeatedly will make the title appear, disappear, appear in the Viewfinder.

Notes:

- The title remains in the memory until a new title is input [or until the Button Type Battery (back-up) is exhausted].
- If the [TITLE] Button is pressed by mistake during shooting, the title will be superimposed and recorded.



Selecting the Title Colour

1 Press.

- The memorised title appears in the Viewfinder.

2 Press repeatedly to select the colour.

- By repeatedly pressing this button, the colour of the title can be changed in the following order. (This function can also be used while the title is already being recorded.)

❶ WHT (White) → ❷ YEL (Yellow) → ❸ RED (Red) → ❹ MAG (Magenta)
→ ❺ BLU (Blue) → ❻ CYN (Cyan) → ❼ GRN (Green) → ❽ BLK (Black) →

Notes:

- Input a title into the memory before selecting the title colour.
- The title colour cannot be selected when the title is not displayed in the Viewfinder.

Selecting the Title Mode

1 Press again to make the title disappear from the Viewfinder.

2 Press repeatedly to select the Title Mode.

- By repeatedly pressing this button, the way in which the title is superimposed onto the picture being recorded can be changed in the following order.

→ ❶ (NORMAL) → ❷ WIPE ↓ → ❸ WIPE ↑ → ❹ SCROL →

❶ The title will appear immediately.

❷ The title will appear gradually from the top.

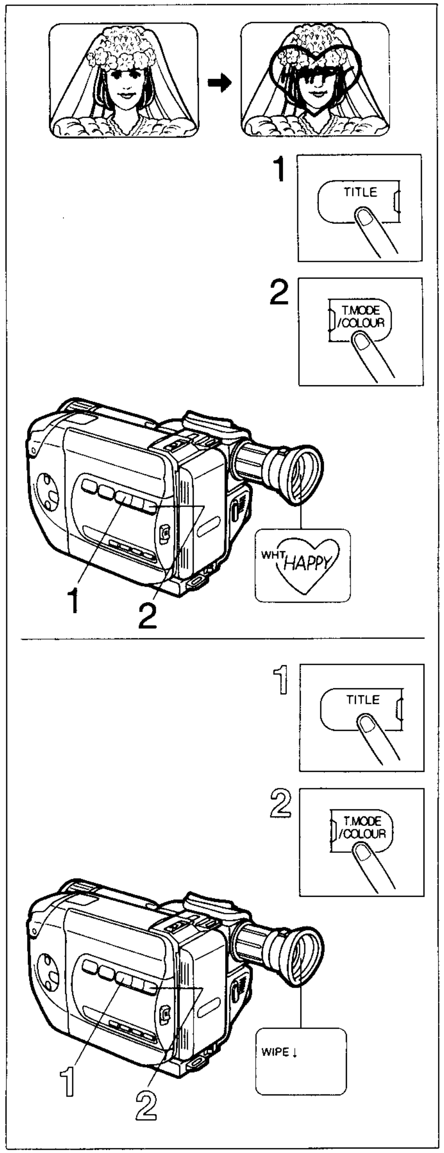
❸ The title will appear gradually from the bottom.

❹ The title will scroll in from the bottom.

- To confirm how the title will later appear during shooting, press the [TITLE] Button again. It will now appear in the selected mode, and the selected colour will also be indicated in the Viewfinder.

Notes:

- Input a title into the memory before selecting the title mode.
- The title mode cannot be selected when the title is displayed in the Viewfinder.



Recording the Memorised Title during Shooting

■ **Superimposing a Title at the Beginning of a Shot.**

1 Press to make the title appear in the Viewfinder.
- Confirm by the indications in the Viewfinder that the selected colour is as desired. At this time, it is still possible to change the colour.

2 Press to start shooting.

■ **Superimposing a Title in the Wipe or Scroll Title Mode at the Beginning of a Shot.**

1 Press to make the title appear in the Viewfinder.

2 Press to select the title colour.

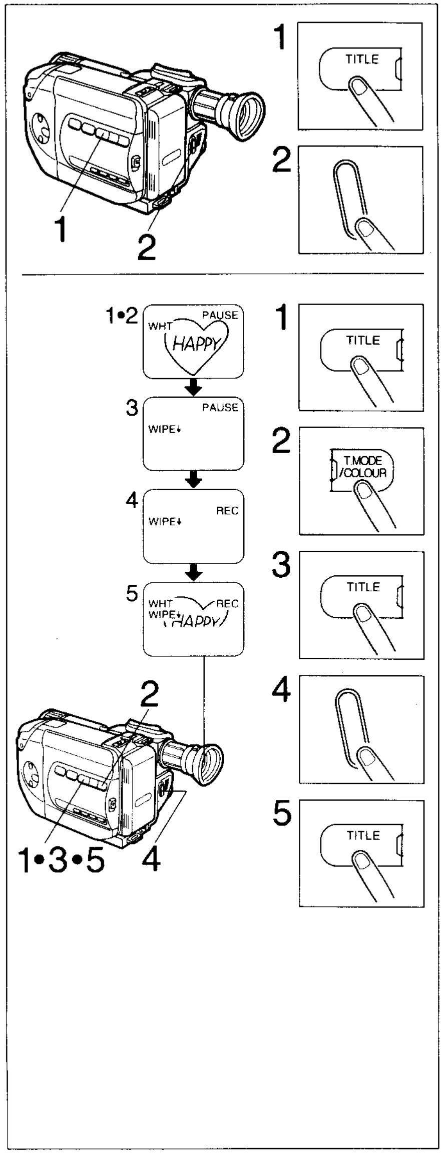
3 Press to make the title disappear from the Viewfinder.
- Confirm by the indications in the Viewfinder that the selected title mode is as desired. At this time, it is still possible to change the title mode.

4 Press to start shooting.

5 After approx. 2 seconds, press.
- The wipe or scroll title will appear in the Viewfinder and it will be recorded in the same way.

■ **Superimposing a Title during Shooting**
- At the point where you want to insert the title, press the [TITLE] Button. (The title appears in the Viewfinder in the selected title mode and selected colour. At the same time, it is superimposed onto the scene that is being shot.)

■ **To Stop the Superimposition of the Title**
Press the [TITLE] Button again.



Automatic White Balance Adjustment

Using the Automatic White Balance Adjustment Function

To attain recordings with natural colours, it is necessary to adjust the sensor in the camera to the existing colour of the light. This adjustment is called white balance adjustment.

The Auto White Balance Adjustment Function provides satisfactory results under almost all shooting conditions. (No operation is necessary.)

When the " ◪ " Indication is displayed in the Viewfinder, the Movie Camera is not in the Auto White Balance Mode.
To put it in the Auto White Balance Mode, press the [W.B] Button ❶ (the White Balance Adjustment is now set to the Auto Mode) or set the Mode Selector Switch to "AUTO".
- The " ◪ " Indication in the Viewfinder will disappear.

- If the Movie Camera is moved from outdoors to indoors during shooting, the picture will initially take on a slightly reddish cast but it will gradually regain its natural colours.
- In the following shooting situations, the Auto White Balance Adjustment Mode may not provide satisfactory results; use the Manual White Balance Adjustment Mode instead:

❶ When shooting under mercury-vapor, natrium or some types of fluorescent lamps.

❷ When intense lighting is used, e.g. from a halogen lamp, or when the colour temperature of the light source is low.

❸ When shooting under lighting conditions which change suddenly.

❹ When shooting outdoors at sunrise or sunset.

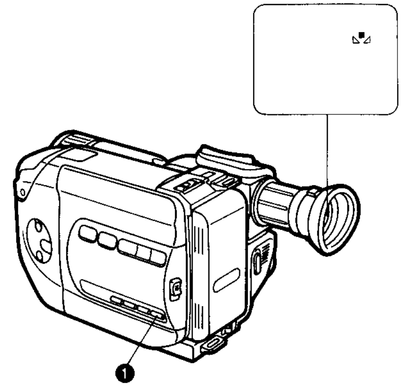
❺ When shooting under firework illumination outdoors at night.

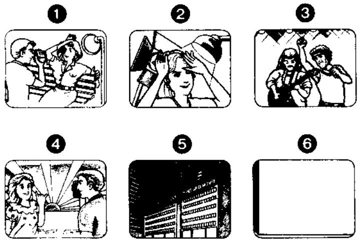
❻ When shooting a subject of a single colour or a subject in front of a single-colour background.
- When shooting under weak illumination.
- When using a grey filter (ND) or other special filters.
- When using a conversion lens.

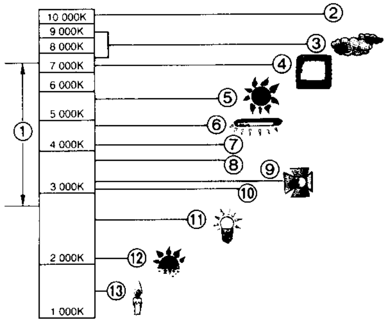
■ What is the Colour Temperature of the Light Source

The colour temperature of the light source is measured in Kelvin (K). The higher the Kelvin value, the more bluish the light is; the lower the value, the more reddish the light is. This is not directly related to the brightness.

① Control range of the Auto White Balance
② Blue sky
③ Cloudy sky
④ TV screen
⑤ Sunlight
⑥ White fluorescent light
⑦ 2 hours after sunrise or before sunset
⑧ 1 hour after sunrise or before sunset
⑨ Halogen light bulb
⑩ 30 minutes after sunrise or before sunset
⑪ Incandescent electric light bulb
⑫ Sunrise or sunset
⑬ Candlelight







Manual White Balance Adjustment

■ **If there is only one light source:**

1 **Attach the Lens Cap to the Lens.**

2 **Set to "MANUAL".**

3 **Keep pressed until the screen in the Viewfinder becomes completely white.**

4 **Press briefly so that the " ⊾■⊿ " Indication appears. Then keep this button pressed for more than 1 second.**

The following indications in the Viewfinder inform about the state of the adjustment:

❶ " ⊾■⊿ " flashes slowly .... Not adjusted

❷ " ⊾■⊿ " flashes rapidly........ During adjustment

❸ " ⊾■⊿ " is lit .... Adjustment is finished
The Movie Camera is now ready for shooting.

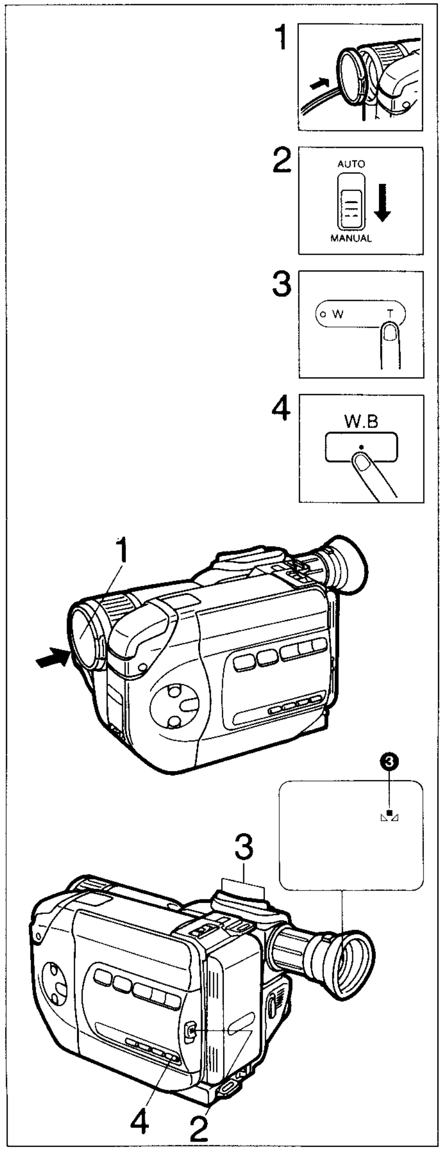
■ **To Change Back to the Auto White Balance Adjustment Mode...**

Press the [W.B] Button, or set the Mode Selector Switch to "AUTO".

- The " ⊾■⊿ " Indication in the Viewfinder will disappear.

■ **Automatic Recall of the Previous White Balance Setting**

- After setting the [OPERATE] Switch to "OFF" and later to "CAMERA" again, the " ⊾■⊿ " Indication flashes slowly, however, the previous white balance setting is still maintained.
  However, to ensure the best possible colour reproduction, adjust the white balance again.
  The previous white balance setting is also maintained after pressing the [REW/⇤] Button to confirm the end of the previously recorded scene.
  However, after removing the Battery Pack (or disconnecting the AC Adaptor from the Movie Camera) the previous white balance setting is no longer maintained.
- When moving the Movie Camera from indoors to outdoors or vice versa, be sure to adjust the white balance again, as the colour of the light has changed considerably.



Manual White Balance Adjustment (cont'd)

■ **If there are several light sources or if the illumination is weak (indoors, etc.):**

1 **Set to "MANUAL".**

2 **Remove the Lens Cap.**

3 **Point the Movie Camera at white paper or at another purely white object.**

4 **Keep pressed until the screen in the Viewfinder becomes completely white.**

5 **Press briefly so that the " ⊾■⊿ " Indication appears. Then keep this button pressed for more than 1 second.**

The following indications in the Viewfinder inform about the state of the adjustment:

❶ " ⊾■⊿ " flashes slowly .... Not adjusted

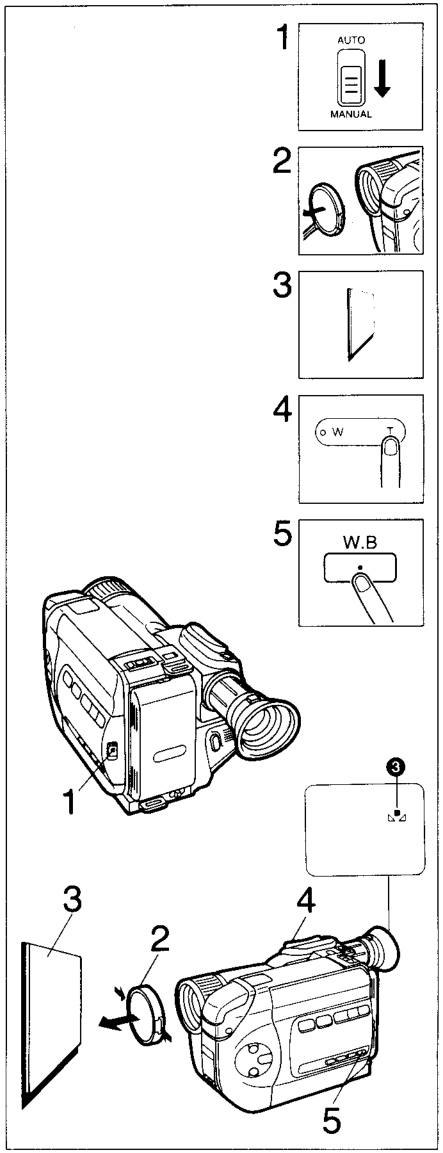
❷ " ⊾■⊿ " flashes rapidly........ During adjustment

❸ " ⊾■⊿ " is lit .... Adjustment is finished
The Movie Camera is now ready for shooting.

■ **To Change Back to the Auto White Balance Adjustment Mode...**

Press the [W.B] Button, or set the Mode Selector Switch to "AUTO".

- The " ⊾■⊿ " Indication in the Viewfinder will disappear.



Playback via a TV Set (Connections)

■ Playback via a TV Set with AV Input Socket
(Using the Supplied AV Output Cable)

- Turn off the Movie Camera and the TV set.

1 Open the Socket Cover.

2 Connect the Movie Camera to the TV set.

Movie Camera		TV Set
Audio Output Socket (L) ❶	↔	Audio Input Socket (L) ❶
Audio Output Socket (R) ❷	↔	Audio Input Socket (R) ❷
Video Output Socket ❸	↔	Video Input Socket ❸

■ Playback via a TV Set without AV Socket
[Using the RF Adaptor (Supplied)]

- Turn off the Movie Camera and the TV set.

1 Open the Socket Cover.

2 Connect the Movie Camera to the TV set.

Movie Camera **TV Set**

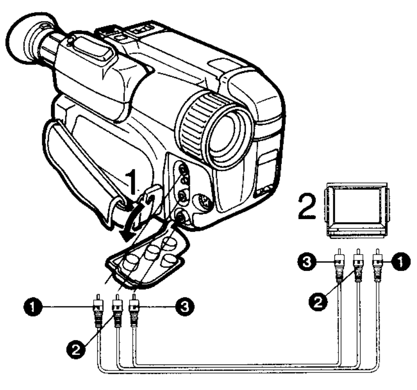
VIDEO OUT
❶ RF DC OUT ↔ **RF adaptor** ↔ ❶ RF IN
AUDIO OUT

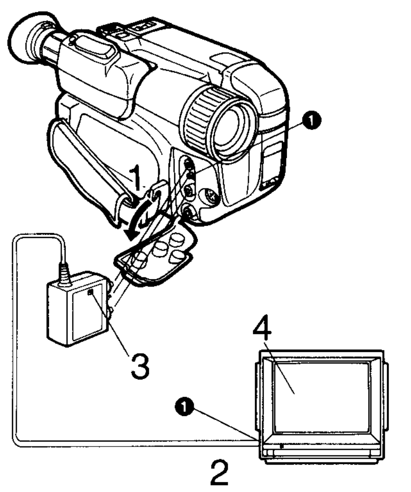
3 Set the PAL System Selector Switch to the correct position.

For the Southeast Asia region, set the RF Converter Channel Selector at "G" position.

4 Select an unused TV programme position (channel).

- Follow the tuning procedure outlined in the instruction booklet for your TV set to re-tune your TV set to the UHF transmission channel 36. The camera picture now appears on the TV screen.
- If in doubt, consult your local video dealer.





Playback

■ How to Play Back in the Viewfinder (Playback from the Beginning of the Tape)

- The recorded tape can be played back in the Viewfinder or on a connected TV set.

1 Insert the recorded video cassette.

2 Press and slide to "VTR".

3 Press.

- The tape will stop automatically when it reaches its beginning.

4 Press.

- The playback starts.
  The Playback Indication "▷" ❶ appears in the Viewfinder.
- The tape will be rewound automatically when it reaches its end.

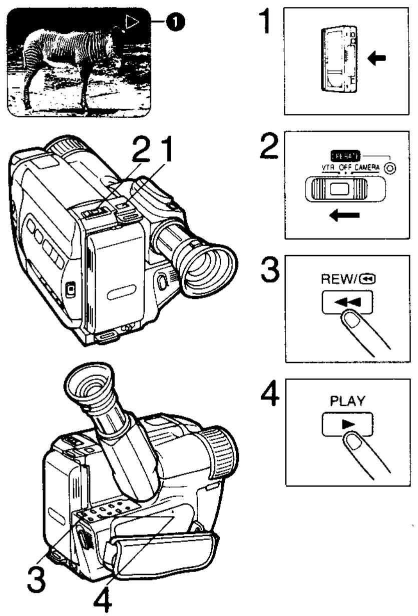
■ To Stop the Playback...
Press the [STOP] Button.

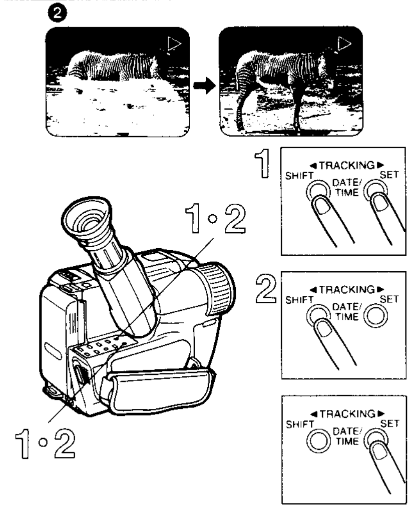
■ How to Adjust the Tracking
If the picture is distorted by noise bars ❷ during playback, the tracking needs to be adjusted.

1 Press both the [◄ TRACKING] and [TRACKING ►] Buttons simultaneously.

2 Eliminate any noise bars by adjusting the tracking with the [◄ TRACKING] or [TRACKING ►] Button.

- When playing back a Video cassette which has been recorded on another movie camera, it may not be possible to eliminate these noise bars completely.





Quick Reference Guide to the Indications in the Viewfinder

(1) Remaining Tape Time Indication

- It shows that the recording time left is 30 minutes.
- The time is indicated in hours and minutes. When there are less than 2 minutes left, the Remaining Tape Time Indication flashes.
- While the Movie Camera calculates the remaining tape time, the "R" Indication flashes.

Note:
When inserting a new tape, if the Tape Length Indication does not match the video cassette being used, the remaining time indicated will not be correct.

(2) The Tape Length Indication

- The Tape Length Indication shows the total length of the video cassette being used.
- Select the tape length (T30 or T45) with the [EC30/45] Switch. Depending on the selected recording speed (SP or LP), the indication is different as shown below:

SP: "T30" 30 minutes of tape (EC-30, SEC-30),
"T45" 45 minutes of tape (EC-45, SEC-45)
LP: "T60" 60 minutes of tape (EC-30, SEC-30),
"T90" 90 minutes of tape (EC-45, SEC-45)

(3) Title Colour Indication

- It shows the colour of the title being superimposed in abbreviated form, e.g. WHT = White.
- The title colour can be selected when the title is displayed in the Viewfinder.

(4) Title Mode Indication

WIPE ↓	The title appears gradually from the top to the bottom.
WIPE ↑	The title appears gradually from the bottom to the top.
SCROL	The title moves into the picture from the bottom.

- The title mode can be selected when the title is not displayed in the Viewfinder.

(5) Image Stabilizer Indication

" ✋ "

- Turn the Image Stabilizer Function on or off by pressing the [STABILIZER] Button. The indication " ✋ " is displayed when it is turned on.

(6) Digital Zoom Indication

- Select the zoom range by pressing the [ZOOM] Button.
"D.ZOOM 1" ("D" means Digital.)
The zoom range is expanded to up to ×12.
"D.ZOOM 2"
The zoom range is expanded to up to ×36.

(7) Magnification Ratio Indication

- It lights up when the Zoom [W] or [T] Button is kept pressed, and it goes out one second after releasing either of the two buttons.

(8) Time Indication

"12:30"

- The current time (hour and minute) is displayed.
The time must initially be set.
- The time is shown in the 24-hour clock system.
- It is possible to display the date alone, or the time and date together.

(9) Date Indication

"15.10.1993"

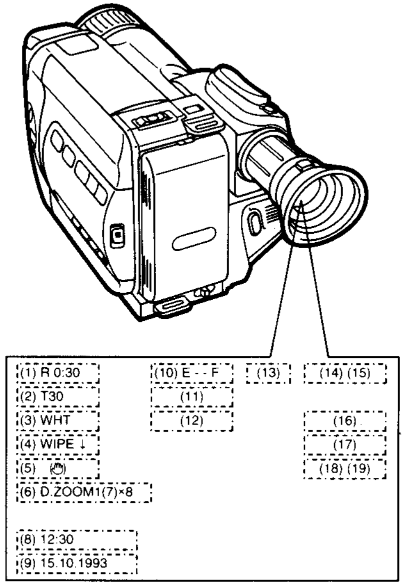
- The year, month, and day are displayed.
The date must initially be set.

(10) Remaining Battery Power/Index Indication "E--F"

- The "–" indications begin to disappear from right to left as the power of the Battery Pack is being used up.
- When switching the Movie Camera on with the Battery Pack attached, the entire indication "E--F" will initially be displayed for approx. one minute. After that, the actually remaining battery power will be displayed.

"INDEX"

- This indication flashes when a recording is started and it indicates that an index signal is being recorded.



Quick Reference Guide to the Indications in the Viewfinder (cont'd)

(11) Tape Counter/Elapsed Tape Time Indication

"0:23.45"

- The elapsed tape time, in either shooting or playback mode, is indicated in hours, minutes and seconds.
- By pressing the [M/RESET] Button for more than one second, it is possible to reset the Tape Counter to "0:00.00".
- When a cassette tape is ejected, the tape counter is automatically reset to "0:00.00".

"M 0:23.45"

- To be able to play back a certain scene at a later time, press the [M/RESET] Button briefly at the beginning of that scene. When the [⇥/FF] Button or the [REW/⇤] Button is pressed later, it is possible to locate this scene easily.
("M" means Memory.)

(12) Warning/Alarm Indications

The following indications are displayed to inform about the conditions of the Movie Camera.
"DEW", " ⊗ ", " ⊘ ", "■", " ⊘ ", "END", and "INDEX".

(13) Backlight Compensation Indication

- Press the [BLC] Button to select the desired degree of backlight compensation.
This is only possible if the Mode Selector Switch is set to "MANUAL".

(14) Tape Running Indications

Depending on the operation being currently performed by the Movie Camera, one of the following indications appears.

"▷"	During Playback Camera Search (in forward direction)
"❚❚"	During Still Playback
"◁◁"	Rewind/Review Mode Camera Search (in reverse direction)
"▷▷"	Fast Forward/Cue Mode

(15) Shooting Mode Indications

"REC"	During Shooting
"PAUSE"	During Shooting Pause
"SNAP"	During Snapshot Shooting
"CHK"	During Rec Review

(16) Recording Speed Indications

"SP"	Standard Play speed mode
"LP"	Long Play speed mode

- The mode can be selected with the [SP/LP] Switch.

(17) Manual White Balance Indication

In the Manual White Balance Adjustment Mode:

" ◺■◿ " Indication flashes slowly	Adjustment is not made.
" ◺■◿ " Indication flashes rapidly	While adjustment is being performed.
" ◺■◿ " Indication is lit	The adjustment has been completed.

In the Automatic White Balance Adjustment Mode (initial mode), none of these indications is lit.

- Adjust the White Balance by pressing the [W.B] Button. This is only possible if the Mode Selector Switch is set to "MANUAL".

(18) Shutter Speed Indications

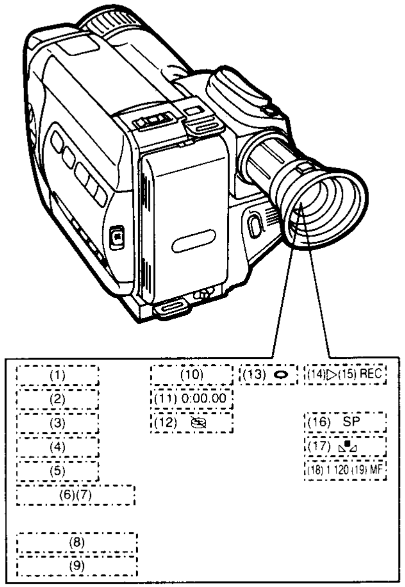
- The desired shutter speed can be selected by repeatedly pressing the [SHUTTER] Button. This is only possible if the Mode Selector Switch is set to "MANUAL".

The numbers in the Shutter Speed Indication show fractions of a second, e.g. 1/120 = 1/120th of a second.

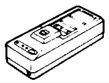
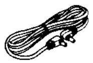
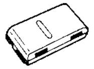
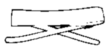
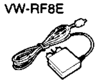
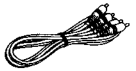
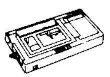
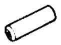
- The initial shutter speed is 1/50 sec. (no indication).
- When the Image Stabiliser Function is turned on, the "1/120" Indication is lit.

(19) Manual Focus Indication

"MF" ("MF" means Manual Focus.)
The Automatic Focus Mode can be turned on or off by pressing the [FOCUS] Button. When adjusting the Focus manually, press the [FOCUS +] or [FOCUS −] Button. This is only possible if the Mode Selector Switch is set to "MANUAL".

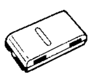
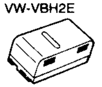
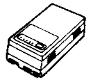
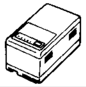
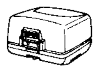
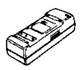
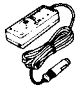
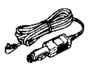
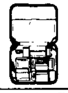
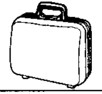
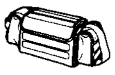
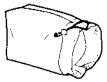
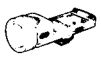
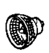
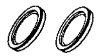
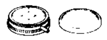
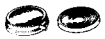
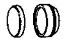
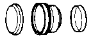
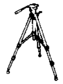
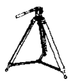
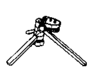
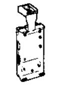
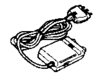
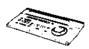
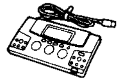


Checklist for the Standard Accessories

1. VW-AS1E 	2. VJA0669 	3. VW-VBS1E 	4. CR2032 	5. VFC0974 
6. VW-RF8E 	7. VFA0028 	8. VW-TCA7E 	9. R6 	

1. **AC Adaptor**
   For supplying power to the Movie Camera or for charging the Battery Pack
2. **DC Input Cable**
   For connection to the AC Adaptor
3. **Battery Pack**
   For supplying power to the Movie Camera
4. **Button Type Battery**
   For storing date, time and title in the memory.
5. **Shoulder Strap**
6. **RF Adaptor**
   For connection to a TV set.
7. **Audio/Video Cable**
   For connection to a TV set
8. **Cassette Adaptor**
   For playback on a VTR
9. **Battery**
   For the Cassette Adaptor

Optional Accessories

1. VW-VBH1E 	2. VW-VBS2E VW-VBH2E 	3. VW-VBR1E 	4. VW-VBR2E 	5. VW-VH1E 	6. VW-BCS1E 
7. VW-KBCS1E 	8. VW-ACC11E 	9. VW-TKS1E 	10. VW-SHCS5E 	11. VW-SBS5E 	12. VW-SCS9E 
13. VZ-LDS15E 	14. VZ-LL15E 	15. VW-LF37E 	16. VW-LFA37E 	17. VW-LFB37E 	18. VW-LT3714E 
19. VW-LW3707E 	20. VZ-CT55E 	21. VZ-CT75E 	22. VZ-CTT1E 	23. VW-SK8E 	24. VW-RF7E 
25. VW-EC310E 	26. VW-EC1E 				

1. Battery Pack
2. Battery Pack
3. Battery Pack with Remaining Battery Power Indicators
4. Battery Pack with Remaining Battery Power Indicators
5. Battery Pack Holder
6. Battery Charger
7. Car Battery Charger
8. Car Battery Cord
9. Travel Kit
10. System Case
11. Soft Bag
12. Soft Cover
13. Video DC Light
14. Replacement Bulb for DC Light
15. Filter Kit
16. Special Effect Filter Kit (A)
17. Special Effect Filter Kit (B)
18. Tele Conversion Lens
19. Wide Conversion Lens
20. Standard Tripod
21. Deluxe Tripod
22. Table Tripod
23. Shoe Adaptor
24. RF Adaptor
25. Editing Controller
26. Editing Controller

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

The following flowchart describes the order or steps for removing cabinet parts and certain printed circuit boards in order to make access to the items needing service.
To reassemble the unit, follow the steps in reverse order.

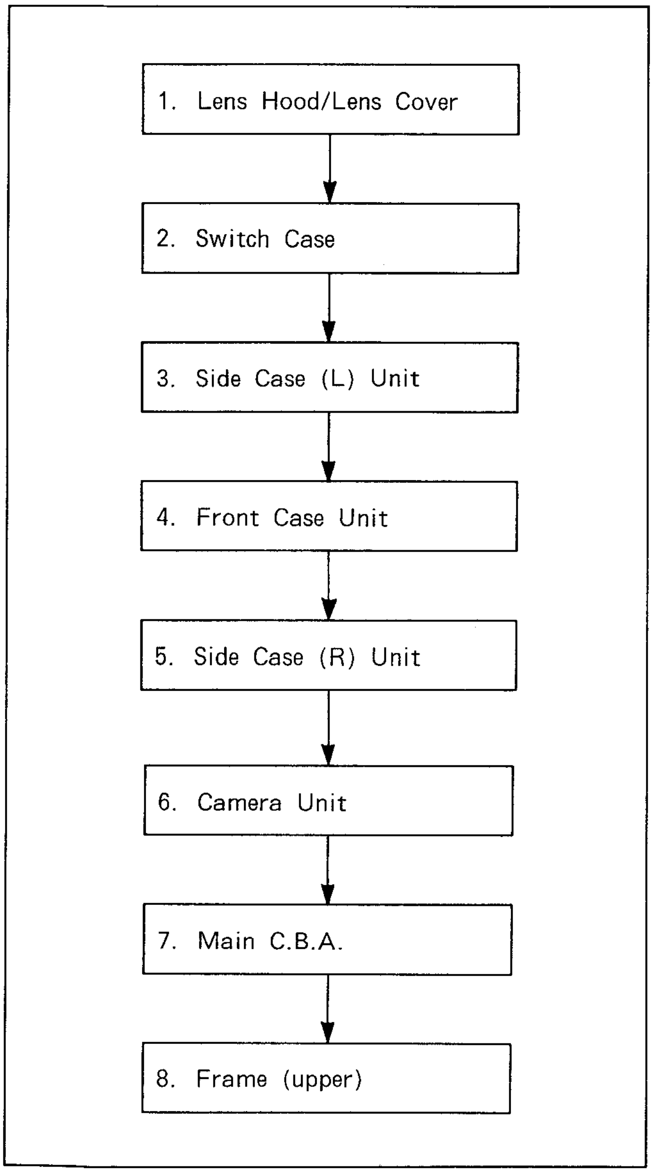

1. Lens Hood/Lens Cover
2. Switch Case
3. Side Case (L) Unit
4. Front Case Unit
5. Side Case (R) Unit
6. Camera Unit
7. Main C.B.A.
8. Frame (upper)

Fig. D1

2-1-2. DETAILED DISASSEMBLY METHOD

1. Removal of Lens Hood/Lens Cover.

   1) Rotate lens Hood to counter−clockwise and remove it.
   2) Remove lens cover.(to arrow mark)

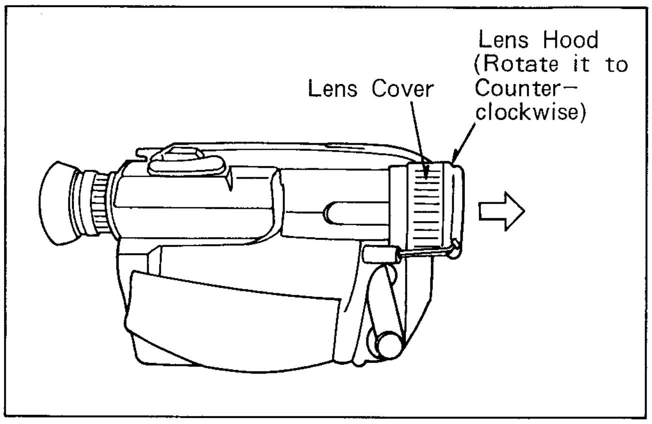

Lens Hood
(Rotate it to Counter−clockwise)
Lens Cover

Fig. D2

2. Removal of Switch Case.

   Remove.....1 Screws(A)
   (and lift it up)

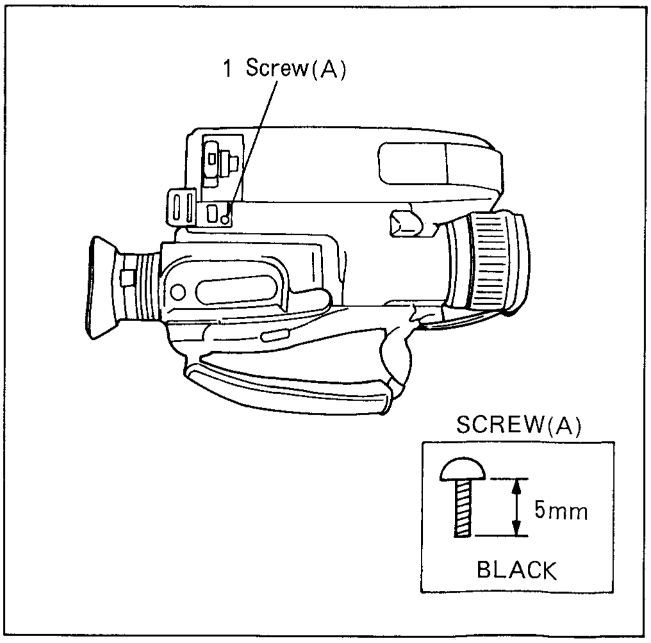

1 Screw(A)
SCREW(A)
5mm
BLACK

Fig. D3

3. Removal of Side Case (L) Unit.

1) Remove.....7 Screws(B), Screw(B-1), Screw(B-2)
2) Lift the Side Case (L) Unit to arrow mark direction.

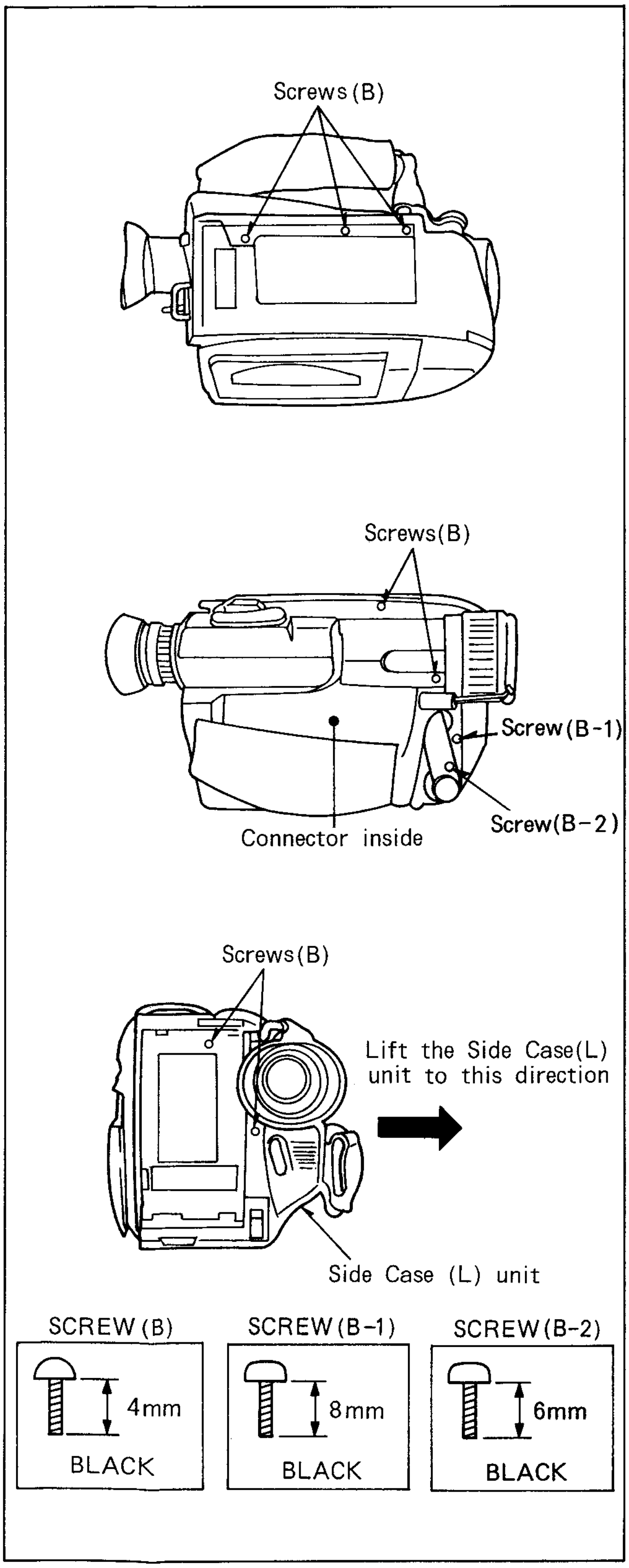

Screws (B)
Screws(B)
Screw(B-1)
Screw(B-2)
Connector inside
Screws(B)
Lift the Side Case(L) unit to this direction
Side Case (L) unit
SCREW (B)
4mm
BLACK
SCREW(B-1)
8mm
BLACK
SCREW(B-2)
6mm
BLACK

Fig. D4

4. Removal of Front Case unit.

1) Remove.....Screw(C), Screw(D)
2) Release...Locking portion(E)

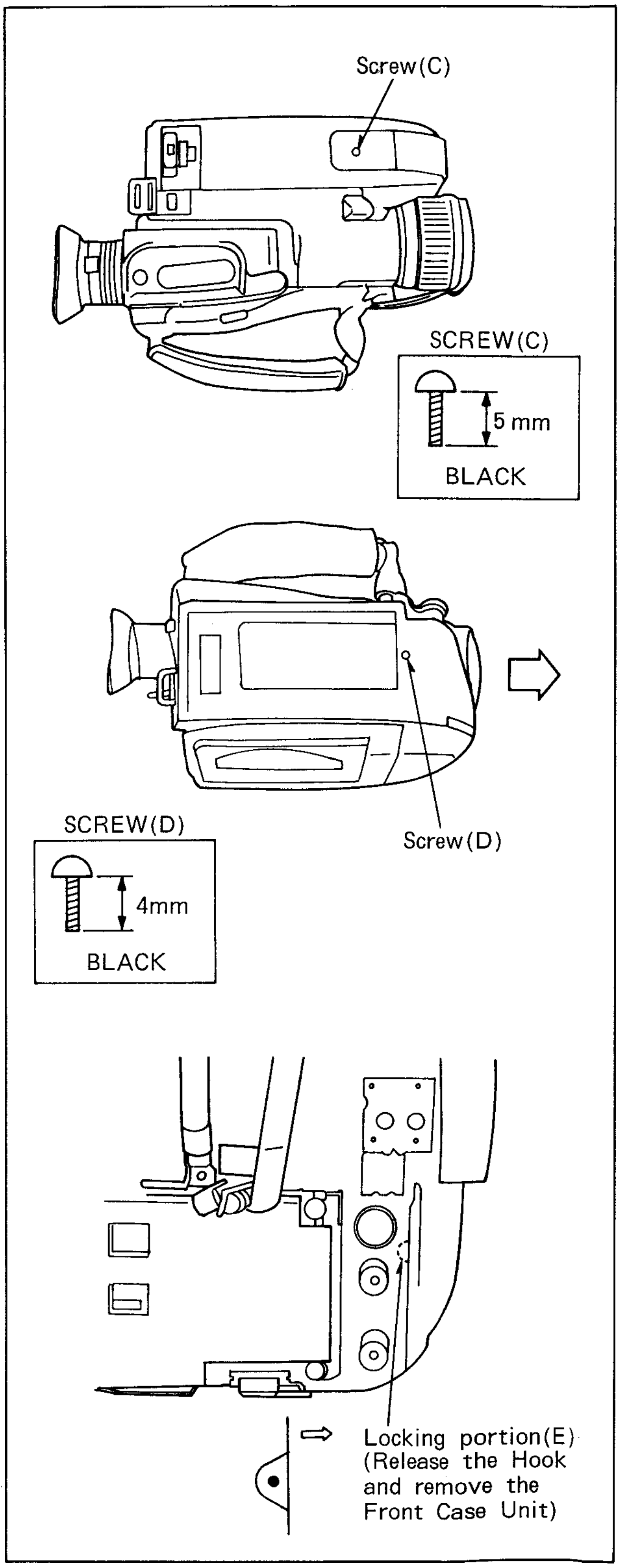

Screw(C)
SCREW(C)
5 mm
BLACK
SCREW(D)
4mm
BLACK
Screw(D)
Locking portion(E)
(Release the Hook and remove the Front Case Unit)

Fig. D5

5. Removal of Side Case (R) unit.

1) Remove.....Flexible cable(F)
2) Remove.....Battery Case(H)
3) Remove.....4 Screws(I), 2 Screws(J)
4) Open the Cassette cover
5) Slide the Side case (R) unit while lifting up the portion(K) little bit.

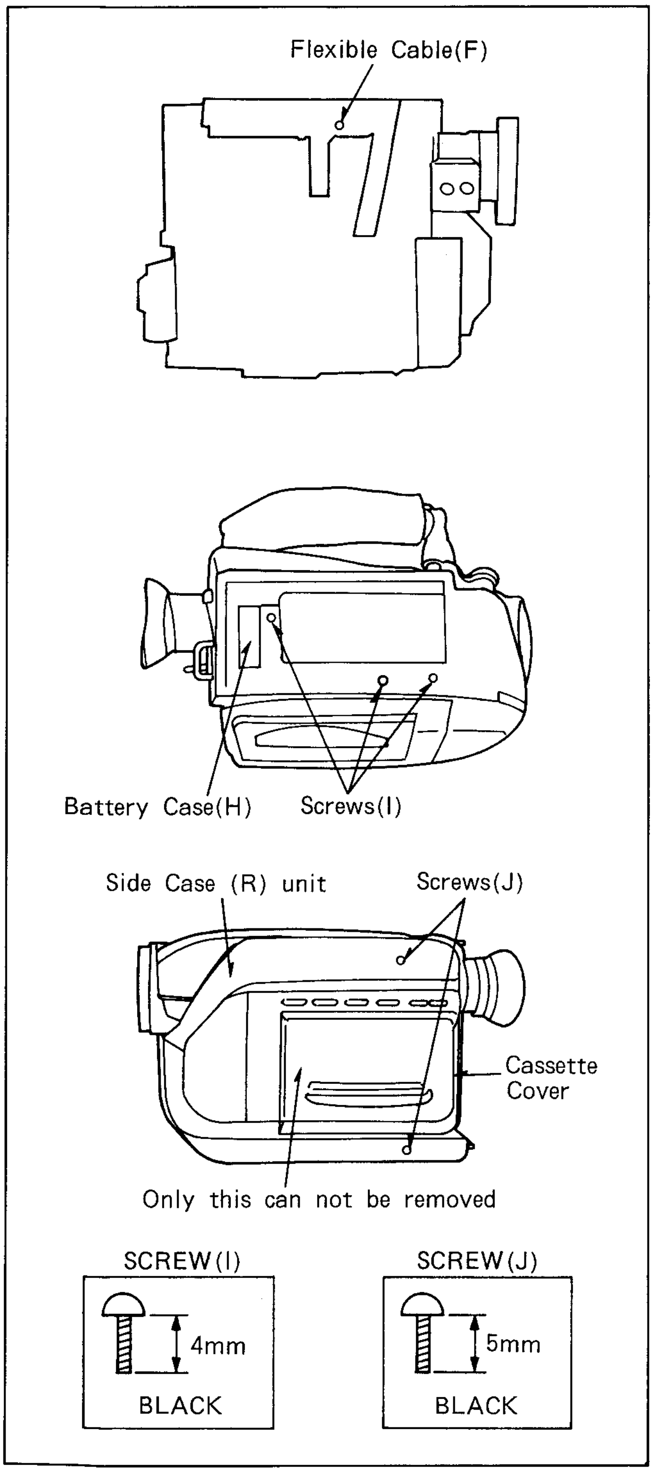

Flexible Cable(F)
Battery Case(H)
Screws(I)
Side Case (R) unit
Screws(J)
Cassette Cover
Only this can not be removed
SCREW(I)
4mm
BLACK
SCREW(J)
5mm
BLACK

Fig. D6-1

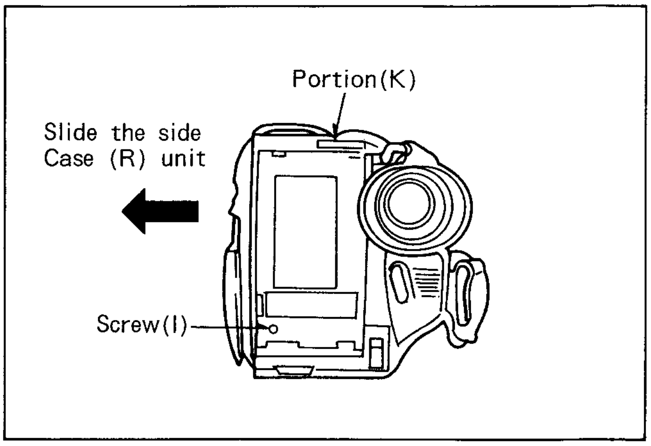

Portion(K)
Slide the side Case (R) unit
Screw(I)

Fig. D6-2

6. Removal of Camera unit.

1) Remove.......1 Screw(L)
2) Disconnect...2 Flexible connectors(M)
3) Lift up the Camera unit to arrow mark direction.

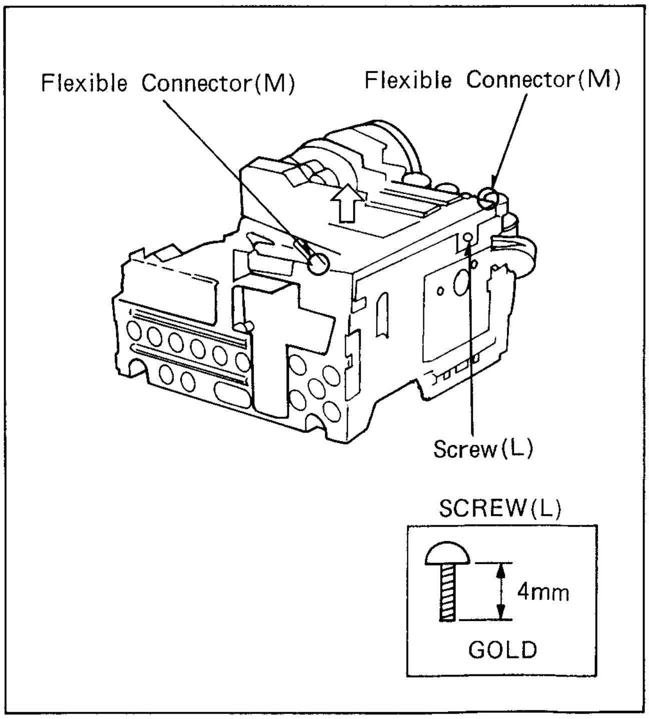

Flexible Connector(M)
Flexible Connector(M)
Screw(L)
SCREW(L)
4mm
GOLD

Fig. D7

7. Removal of Main C.B.A.

1) Disconnect...4 Flexible Connectors
2) Remove.......3 Screws(N)
3) Disconnect... 1 direct connected connector(O)
(Lift up the C.B.A.)
4) Slide the Main C.B.A. to arrow mark direction and remove it.

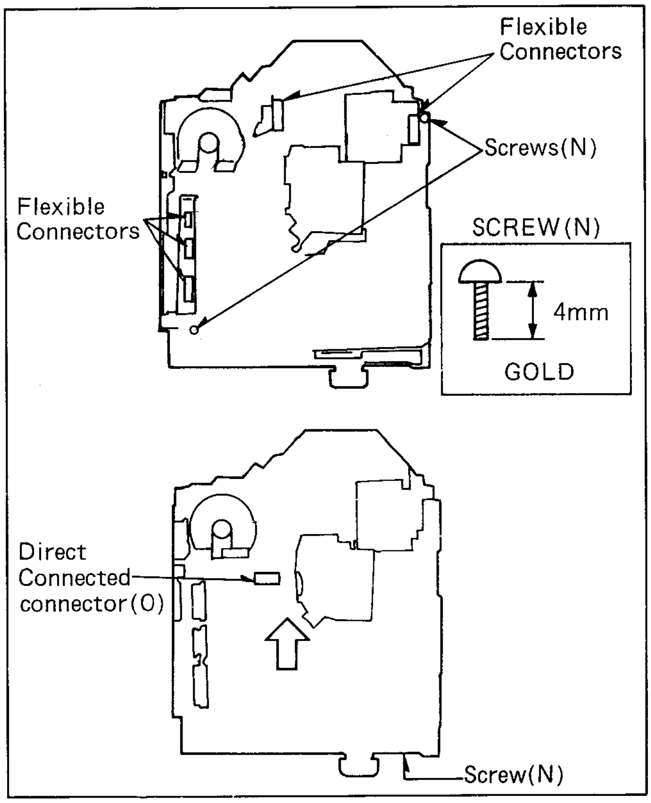

Flexible Connectors
Screws(N)
Flexible Connectors
SCREW(N)
4mm
GOLD
Direct Connected connector(O)
Screw(N)

Fig. D8

8. Removal of Frame(upper)

1) Remove.....2 Screws(P), Screw(R)
2) Lift the Frame up

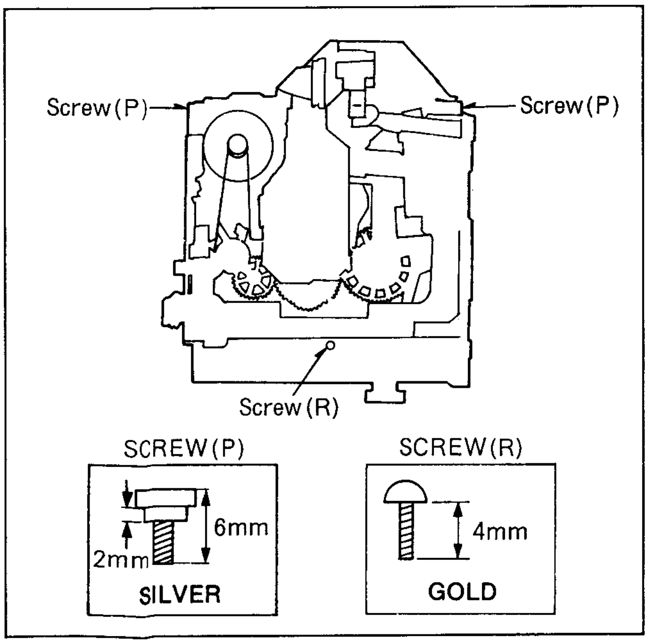

Screw(P)
Screw(P)
Screw(R)
SCREW(P)
6mm
2mm
SILVER
SCREW(R)
4mm
GOLD

Fig. D9

2-2. DISASSEMBLY PROCEDURES OF MECHANISM

1. Removal of Cassette Holder Unit.

(1) Unsolder following flexible connectors on the bottom side.

(1) FLEXIBLE CONNECTOR TO SUPPLY PHOTO TR.
(2) FLEXIBLE CONNECTOR TO TAKE UP PHOTO TR.

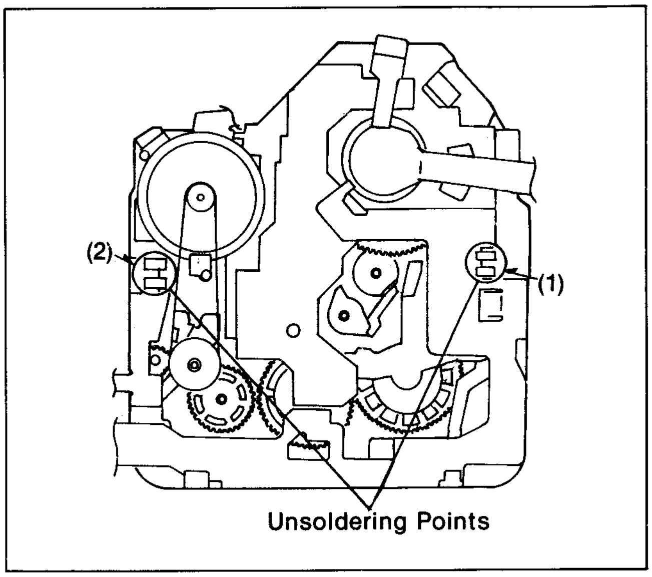

(2)
(1)
Unsoldering Points

Fig. M1

(2) Remove 4 red screws indicated below.

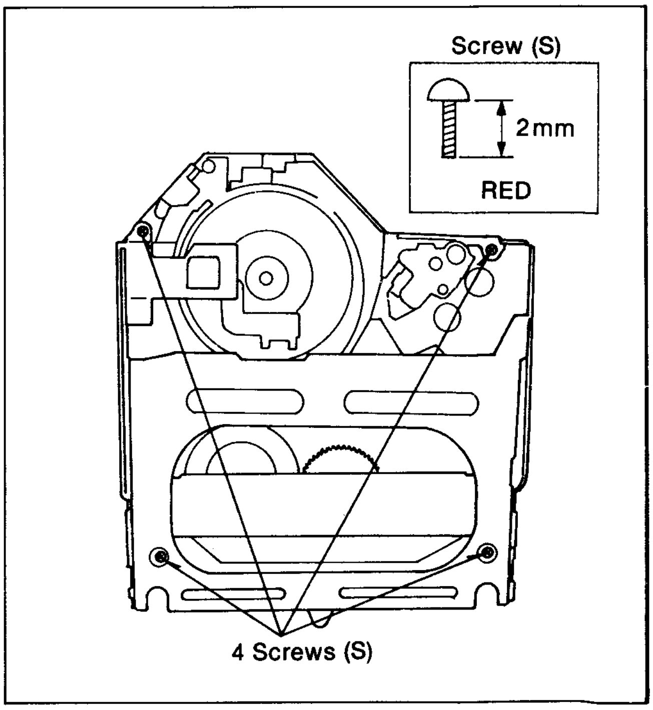

Screw (S)
2mm
RED
4 Screws (S)

Fig. M2

(3) Release Eject Lock Lever and take out Cassette Holder Unit.

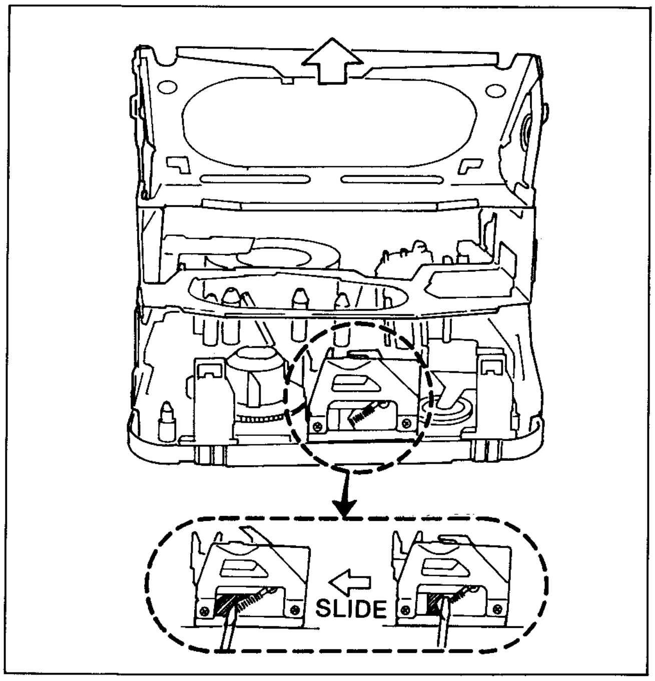


Fig. M3

2. REMOVAL OF DD CYLINDER UNIT.

Note: *
Upper Cylinder Unit is not replaceable on it's own. So only DD Cylinder Unit is available for ordering service parts.

(1) Remove RT (Rotary Transformer) Connector by using a screw driver.
(2) Remove 3 screws to take out DD Cylinder Unit.

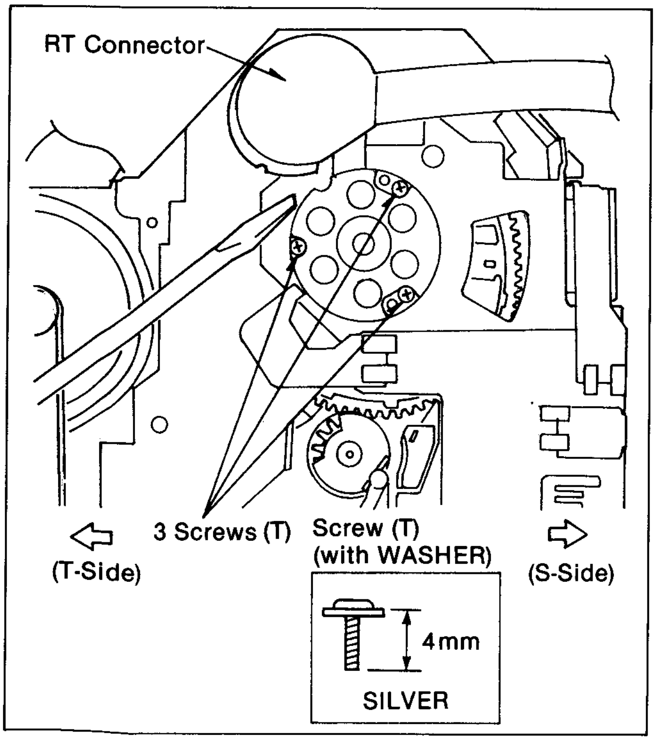

RT Connector
3 Screws (T)
Screw (T)
(with WASHER)
(T-Side)
(S-Side)
4mm
SILVER

Fig. M4

3. REMOVAL OF S-RAIL UNIT, LOADING MOTOR UNIT & TENSION REGULATOR UNIT.

(1) Move tape loading Posts(S1, T1 and T2) half way in the tape loading direction by applying 1.5DC to Loading Motor.

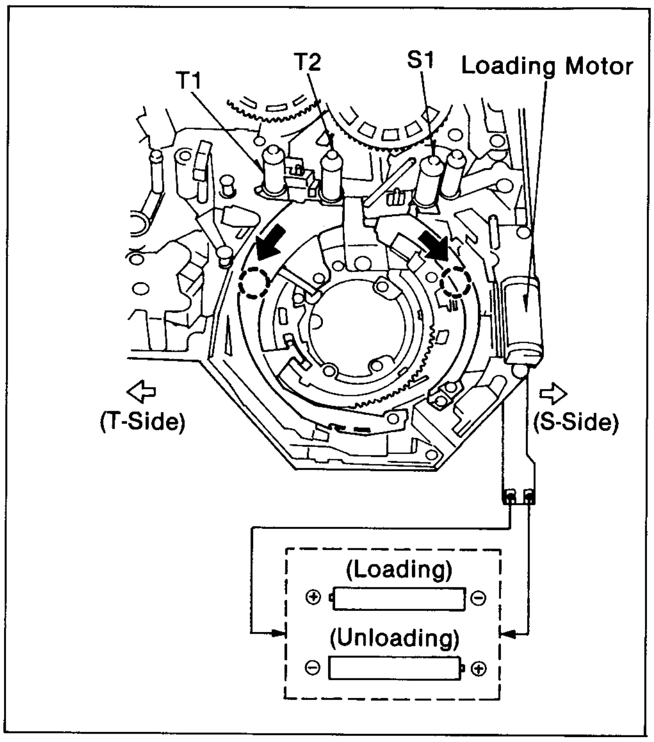

T1
T2
S1
Loading Motor
(T-Side)
(S-Side)
(Loading)
⊕
⊖
(Unloading)
⊖
⊕

Fig. M5

(2) Remove 2 screws and take out S-Rail Unit.

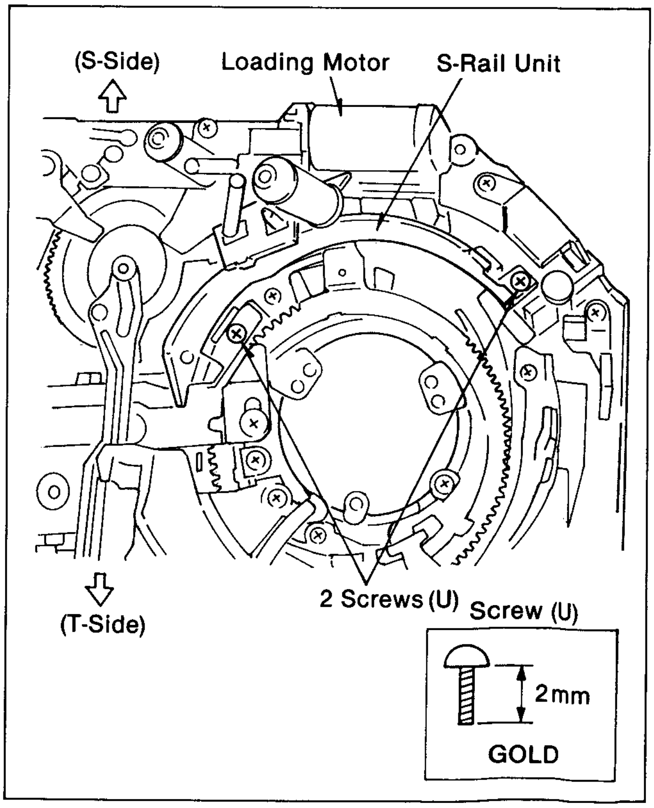

(S-Side)
Loading Motor
S-Rail Unit
(T-Side)
2 Screws (U)
Screw (U)
2mm
GOLD

Fig. M6

(3) Remove 2 screws (Slightly move Loading Posts in the unloading direction.) and take out Loading Motor Unit.

(4) Unhook the spring(* Remember the original hooking position for reinstalling after), remove a washer and take out Tension Regulator Unit.
Don't lose a spacer underneath.

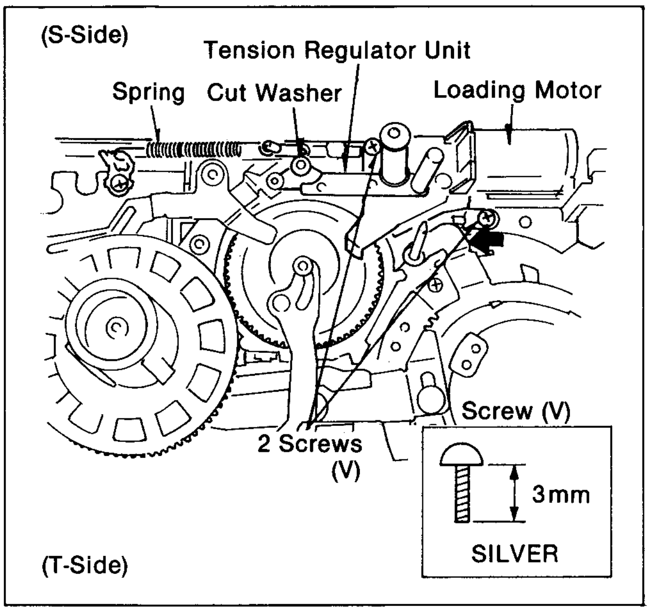

(S-Side)
Tension Regulator Unit
Spring
Cut Washer
Loading Motor
2 Screws
(V)
Screw (V)
3mm
SILVER
(T-Side)

Fig. M7

4. REMOVAL OF SUPPLY REEL TABLE, EJECT LEVER UNIT AND PAD ARM.

(1) Remove a washer and take out Supply Reel Table. Don't lose a spacer underneath.

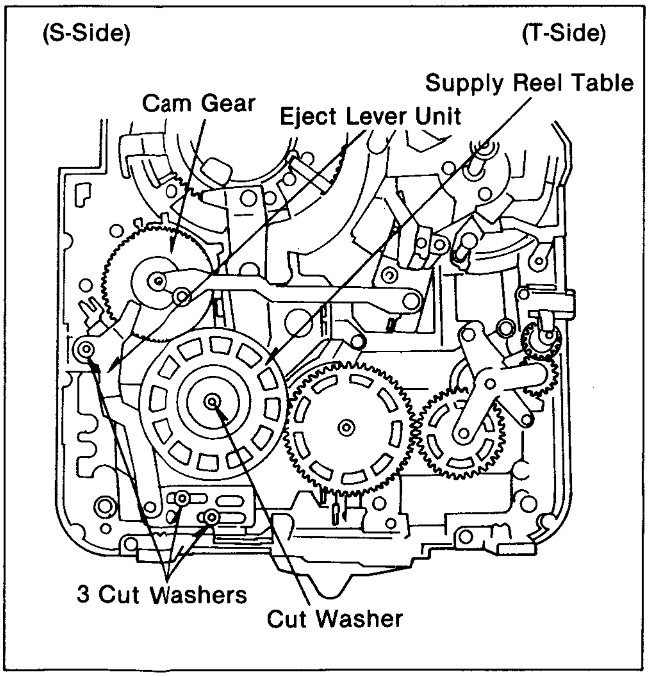

(S-Side)
(T-Side)
Supply Reel Table
Cam Gear
Eject Lever Unit
3 Cut Washers
Cut Washer

Fig. M8

(2) Remove 3 washers, 2 screws on Eject Lock Base to make a clearance (* Eject Lock Base is soldered on the flexible P.C. Board.) and take out Eject Lock Lever.

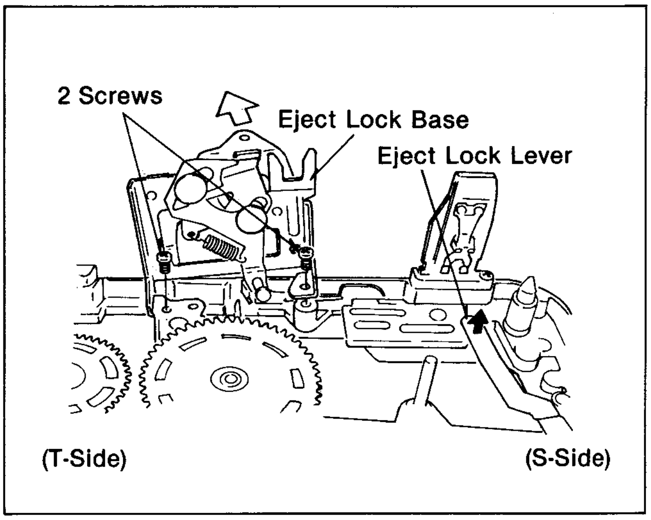

2 Screws
Eject Lock Base
Eject Lock Lever
(T-Side)
(S-Side)

Fig. M9

(3) Remove 2 washers, pull Pinch Drive Arm to the left (S–side) and take it out.

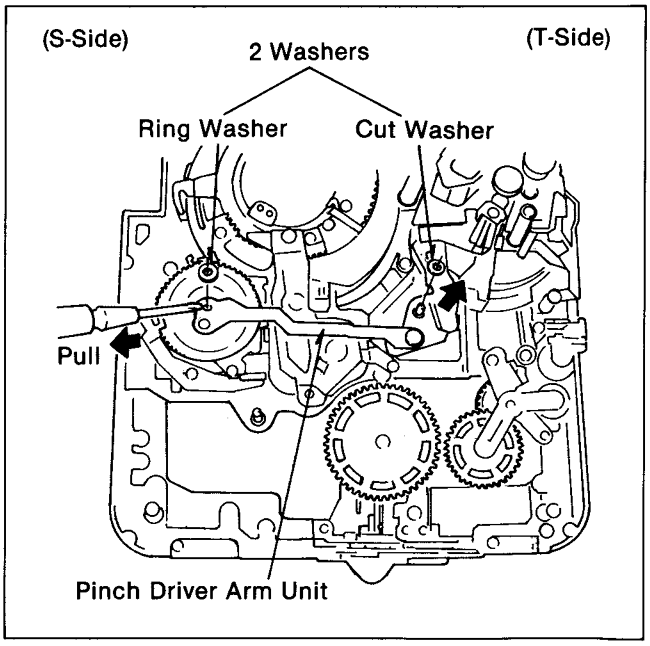

(S-Side)
2 Washers
(T-Side)
Ring Washer
Cut Washer
Pull
Pinch Driver Arm Unit

Fig. M10

(4) Remove a washer and take out Pad Arm.

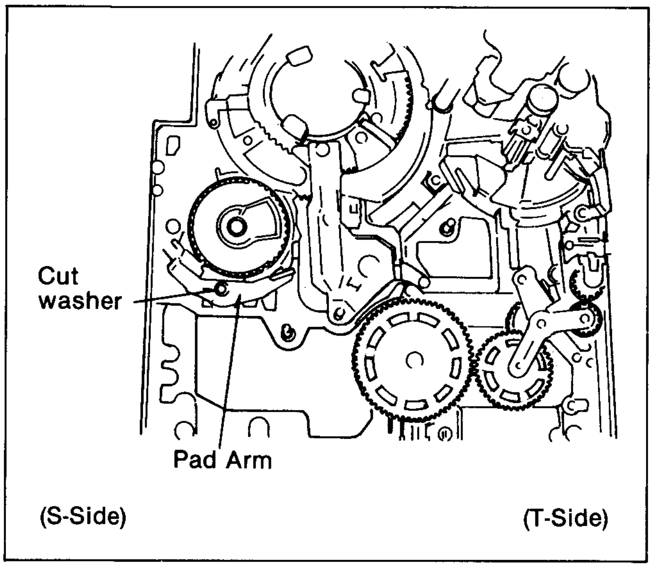

Cut washer
Pad Arm
(S-Side)
(T-Side)

Fig. M11

5. REMOVAL OF T-RAIL UNIT, SWING ARM UNIT, LOADING UNIT AND MODE SW UNIT

(1) Remove 2 screws and take out T-Rail Unit. (* Flexible Connector of Sensor LED has to be unsoldered on the bottom side.)

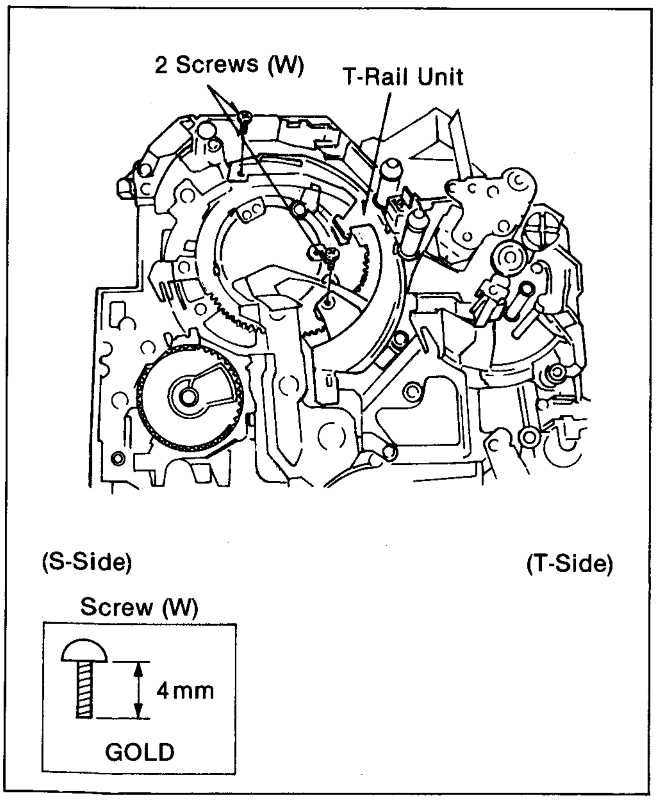

2 Screws (W)
T-Rail Unit
(S-Side)
(T-Side)
Screw (W)
4mm
GOLD

Fig. M12

Caution:
Do not touch inside cam Gear and keep the cam Gear away from grease and dusts.

(2) Remove 2 screws, take out Holder Angle and Swing Arm Unit.

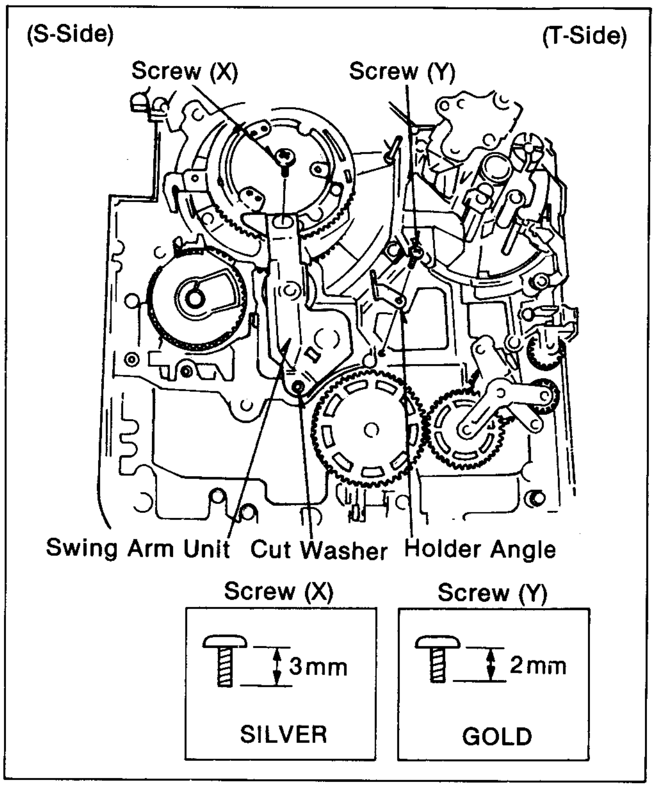

(S-Side)
(T-Side)
Screw (X)
Screw (Y)
Swing Arm Unit
Cut Washer
Holder Angle
Screw (X)
3mm
SILVER
Screw (Y)
2mm
GOLD

Fig. M13

(3) Remove 5 screws.

(4) Loosen Screw (a) to make a clearance and take out Loading Unit.

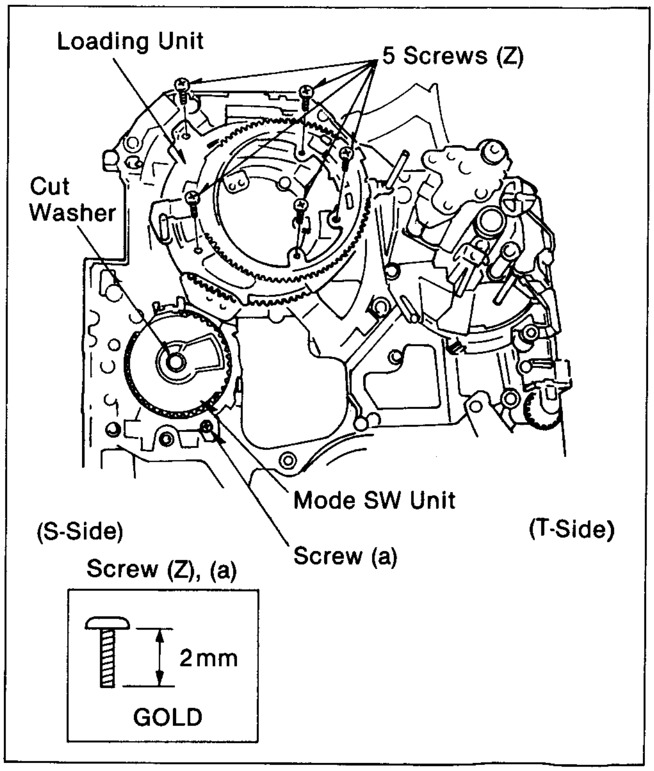

Loading Unit
5 Screws (Z)
Cut Washer
Mode SW Unit
(S-Side)
(T-Side)
Screw (a)
Screw (Z), (a)
2mm
GOLD

Fig. M14

(5) Remove screw (a) and cut washer to take out mode SW unit. (※Mode SW Base is soldered on the flexible P.C. Board).

2-3. ASSEMBLY AND PHASE ADJUSTMENT PROCEDURES OF MECHANISM

1. ASSEMBLY AND PHASE ADJUSTMENT OF LOADING UNIT.

   (1) Install Loading Unit and tighten 5 screws.
   (2) Adjust mechanical phase so that phase marks (See–through holes) meet on both supply and take up sides as shown below.

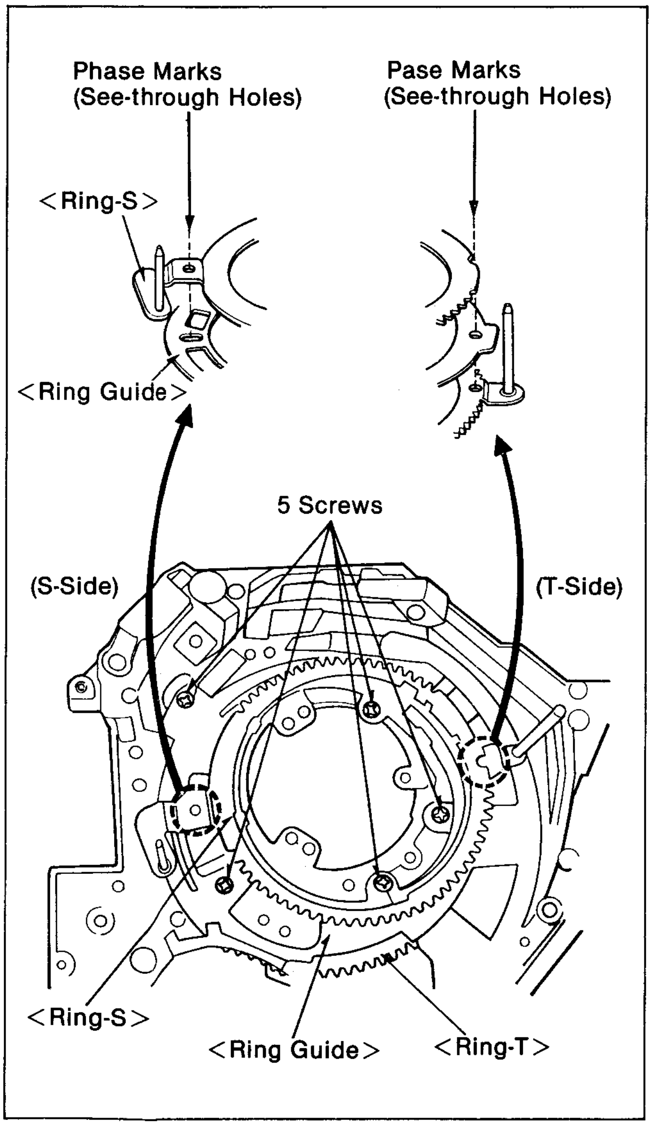

Phase Marks
(See-through Holes)
Pase Marks
(See-through Holes)
<Ring-S>
<Ring Guide>
5 Screws
(S-Side)
(T-Side)
<Ring-S>
<Ring Guide>
<Ring-T>

Fig. M15

2. ASSEMBLY AND PHASE ADJUSTMENT OF CAM GEAR.

   (1) Install Cam Gear as shown in Fig.M16. Put the washer.

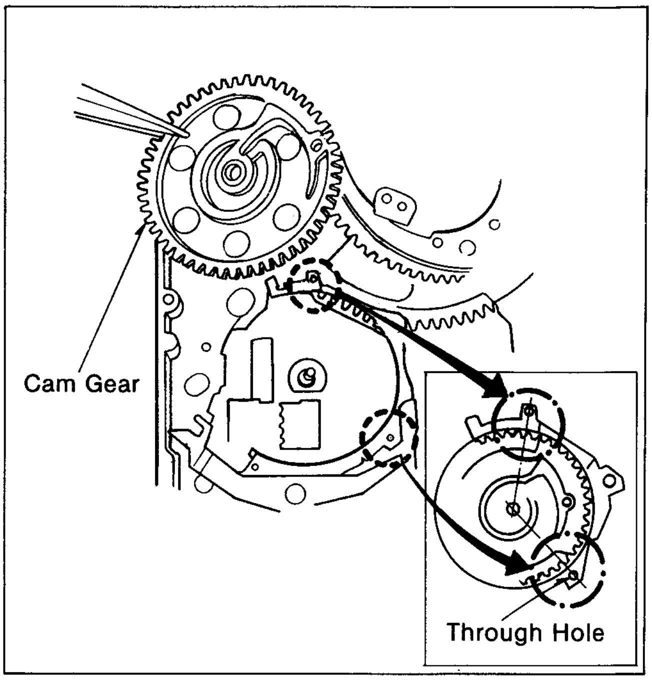

Cam Gear
Through Hole

Fig. M16

3. ASSEMBLY OF PENDULUM ARM UNIT.

   (1) Install Swing Arm Unit and tighten 2 screws with the holder angle.
   (2) After that, Confirm that the phase mark on Loading Ring−T can be seen through the square cutout of Swing Arm Unit. Also, the phase mark of Swing Arm Unit (V−cutout) is meeting the phase mark on Loading Ring−S Unit on the bottom side. Those phase marks naturally come to the specific positions, if the previous phase adjustments have been done correctly.

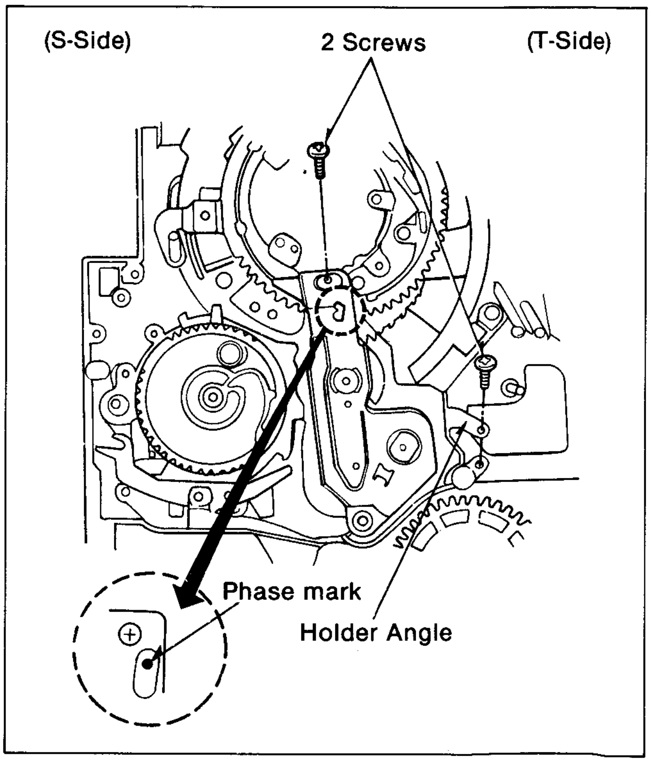

(S-Side)
2 Screws
(T-Side)
Phase mark
Holder Angle

Fig. M17

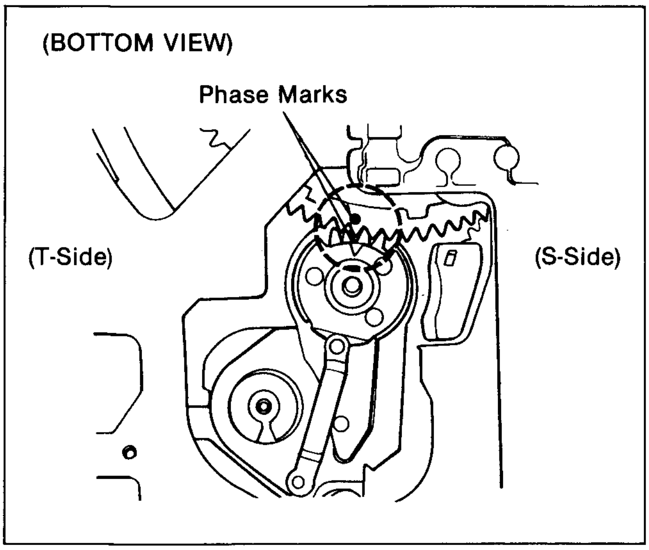

(BOTTOM VIEW)
Phase Marks
(T-Side)
(S-Side)

Fig. M18

4. ASSEMBLY OF LOADING UNIT PINCH DRIVE ARM UNIT AND CONFIRMATION OF MECHANICAL MOVEMENT

(1) Install Loading Motor Unit and tighten one screw. (one more screw has to be tightened after installing Pinch Drive Arm Unit, which is explained after.)

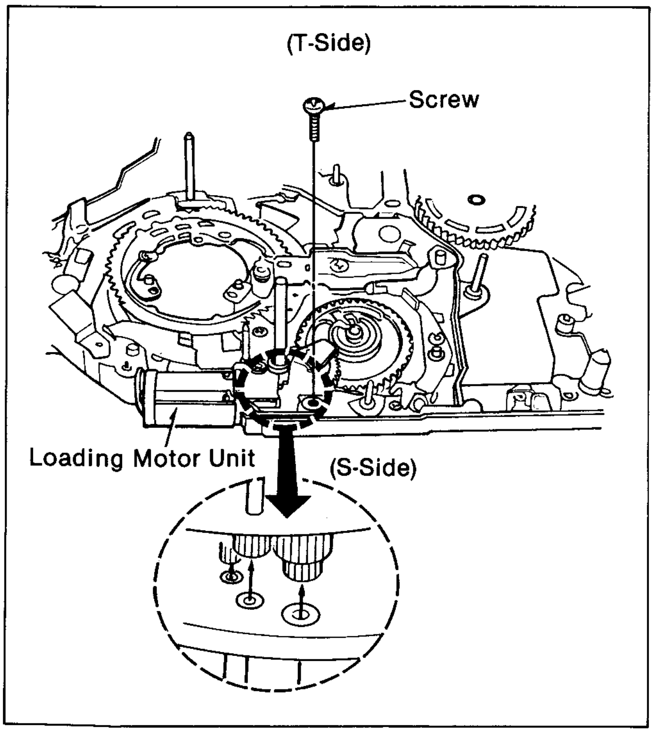

(T-Side)
Screw
Loading Motor Unit
(S-Side)

Fig. M19

(2) Install Pinch Drive Arm Unit and put washer (A).

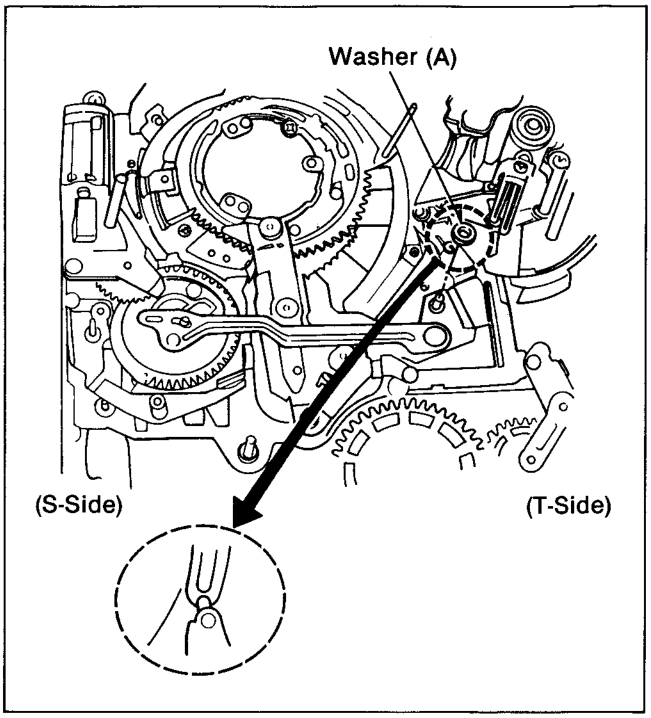

Washer (A)
(S-Side)
(T-Side)

Fig. M20

(3) Move Pinch Roller to the unloading position by finger and put washer (B).

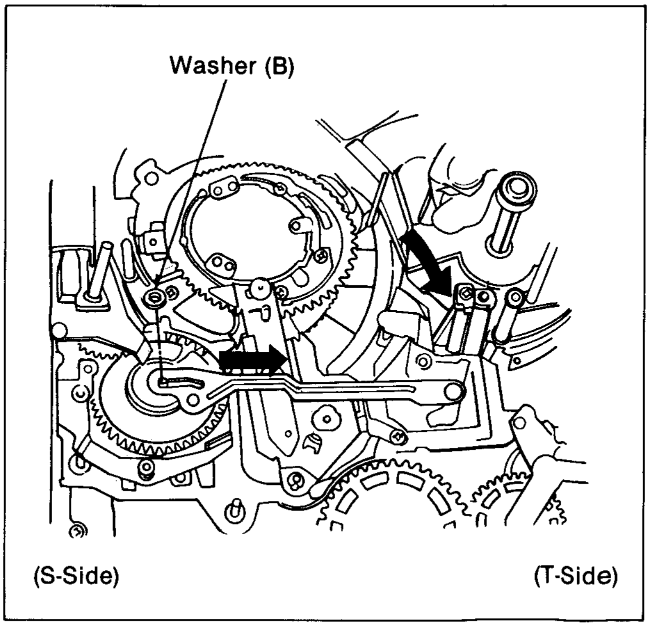

Washer (B)
(S-Side)
(T-Side)

Fig. M21

(4) Slightly move Loading Ring-S in the unloading direction by applying 1.5VDC to Loading Motor and tighten a screw.

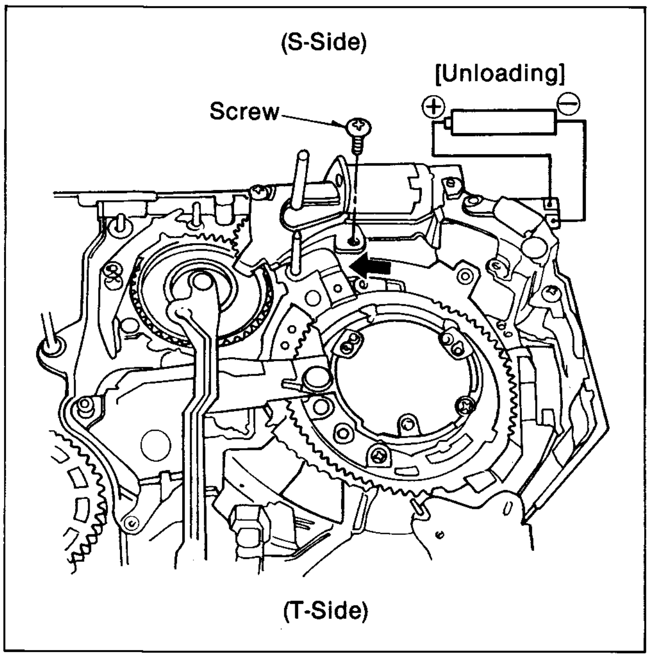

(S-Side)
[Unloading]
Screw
⊕
⊖
(T-Side)

Fig. M22

(5) Confirmation of Mechanical Movement and phase.
In this condition, confirm that the mechanism smoothly moves in both loading and unloading directions by changing the polarity of the battery.
After that, move the mechanism back to the phase adjustment position and confirm all phase marks come to each specific position.

5. ASSEMBLY OF S–RAIL UNIT AND T–RAIL UNIT

(1) Install S–Rail Unit passing Link Post of Ring–S through the linking hole of the S–Rail Unit, and tighten 2 screws.

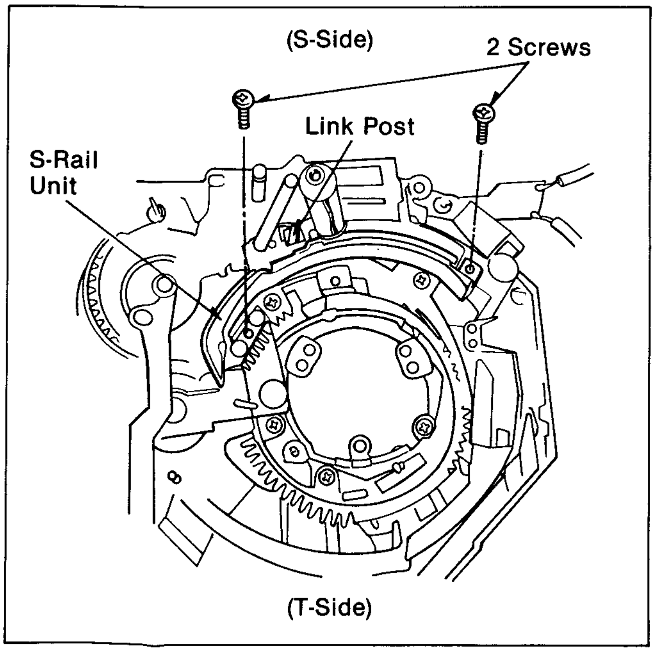

(S-Side)
2 Screws
Link Post
S-Rail Unit
(T-Side)

Fig. M23

(2) In the same way, install T–Rail Unit and tighten 2 screws.
(3) Solder the flexible connector of Sensor LED on the bottom side.

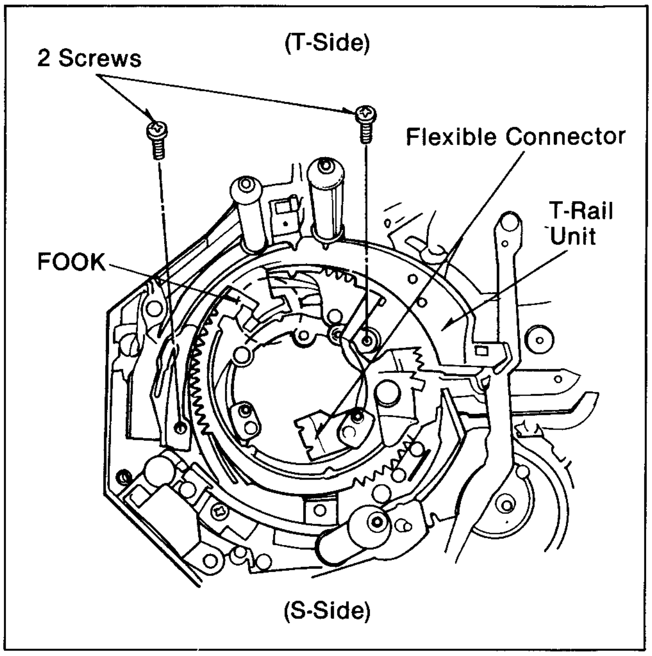

(T-Side)
2 Screws
Flexible Connector
T-Rail Unit
FOOK
(S-Side)

Fig. M24

6. ASSEMBLY OF EJECT LEVER UNIT

(1) Install Eject Lever Unit and link the arm with Eject Lock Base.
(2) Fix Eject Lock Base with 2 screws and Eject Lever Unit with 3 washers.

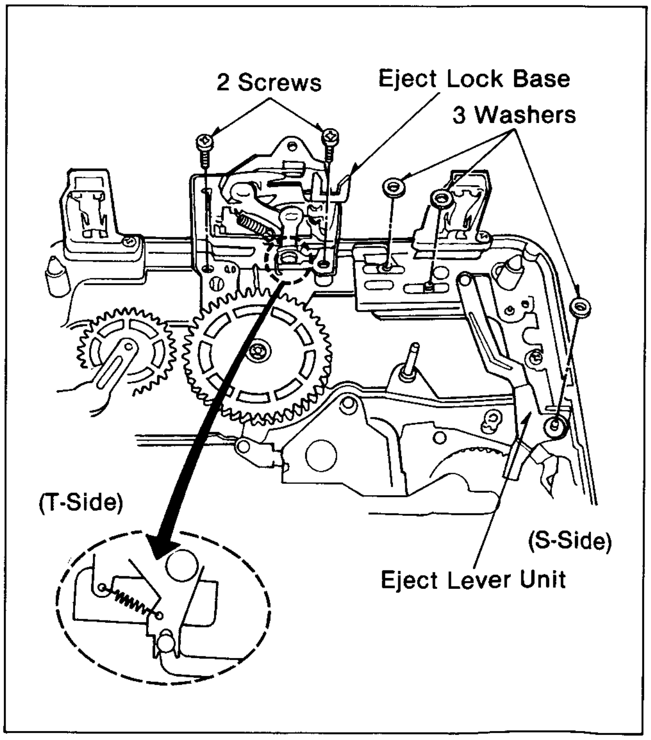

2 Screws
Eject Lock Base
3 Washers
(T-Side)
(S-Side)
Eject Lever Unit

Fig. M25

7. ASSEMBLY OF TENSION REGULATOR UNIT.

(1) Install Tension Regulator Unit so that the guide arm fits in outer inside of Cam Gear.
(2) Put the washer and hook Tenshion Spring to the original position.

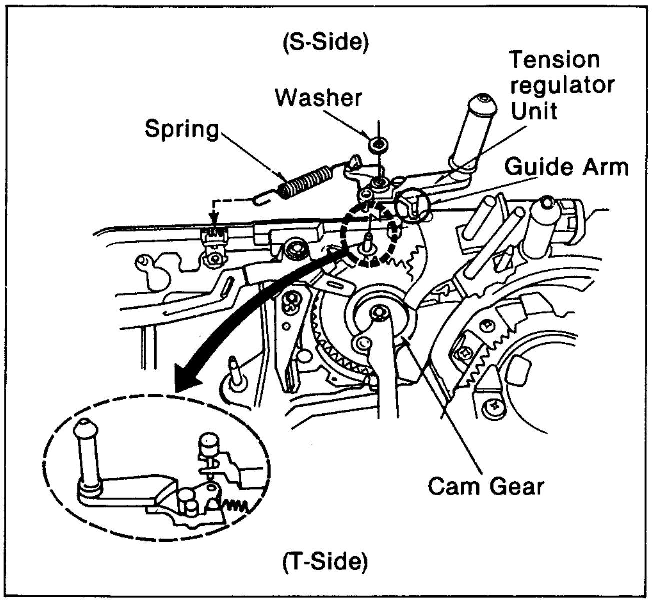

(S-Side)
Tension regulator Unit
Washer
Spring
Guide Arm
Cam Gear
(T-Side)

Fig. M26

8. ASSEMBLY OF SUPPLY REEL TABLE

(1) Install Supply Reel Table and put a washer.

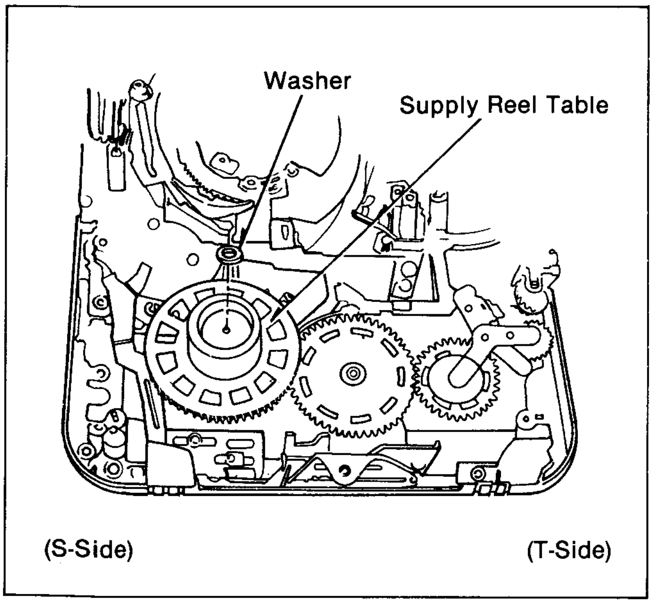

Washer
Supply Reel Table
(S-Side)
(T-Side)

Fig. M27

9. ASSEMBLY OF DD CYLINDER UNIT

(1) Install DD Cylinder unit so that the fixating pins fit into the fixating holes, and tighten 3 screws from the bottom side.

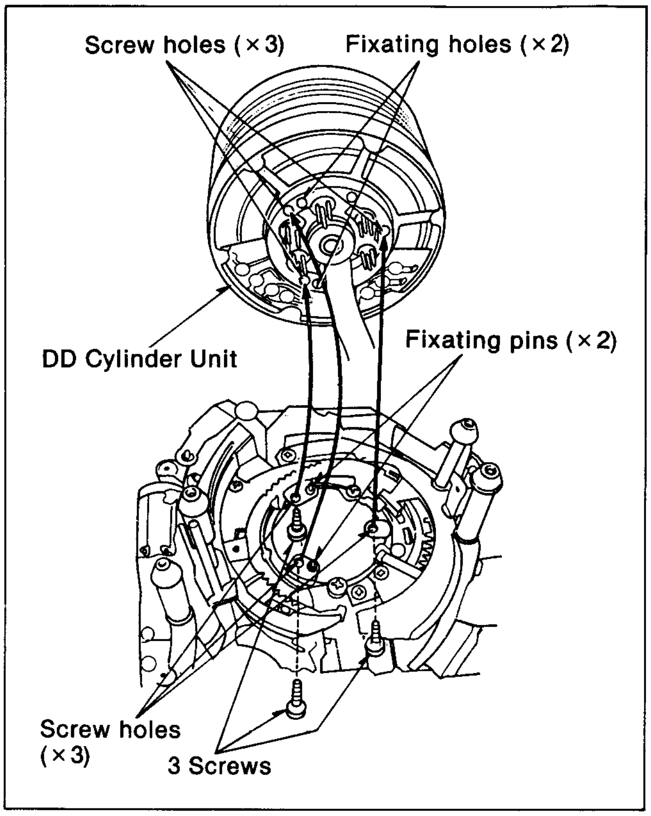

Screw holes (×3)
Fixating holes (×2)
DD Cylinder Unit
Fixating pins (×2)
Screw holes (×3)
3 Screws

Fig. M28

10. ASSEMBLY OF RT CONNECTOR

(1) Hold RT Connector aiming the phase mark of RT Connector (while indication) to the phase mark on the chassis.
(2) Carefully Install the RT Connector passing lead pins of DD Cylinder Unit through each corresponding hole of the RT Connector.

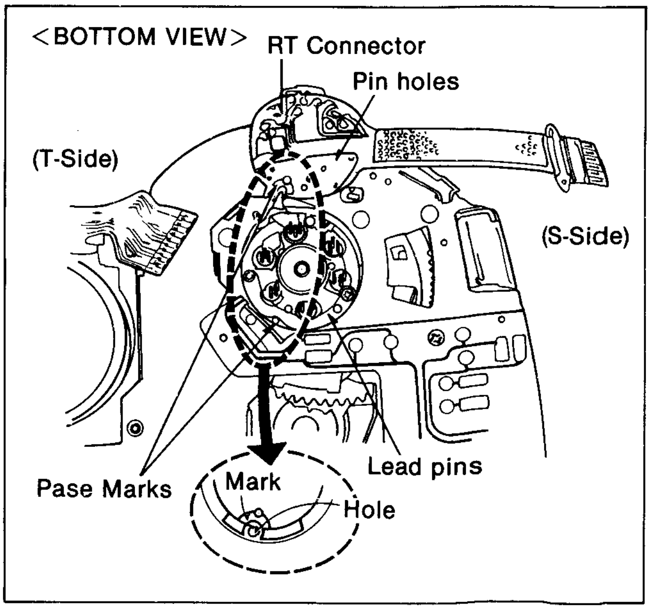

<BOTTOM VIEW>
RT Connector
Pin holes
(T-Side)
(S-Side)
Lead pins
Pase Marks
Mark
Hole

Fig. M29

11. ASSEMBLY OF CASSETTE HOLDER UNIT.

(1) Install Cassette Holder Unit and tighten 4 red screws.
(2) Finally, solder flexible connectors of Supply Photo Sensor, Take up photo Sensor and Loading Motor Unit on the bottom side.

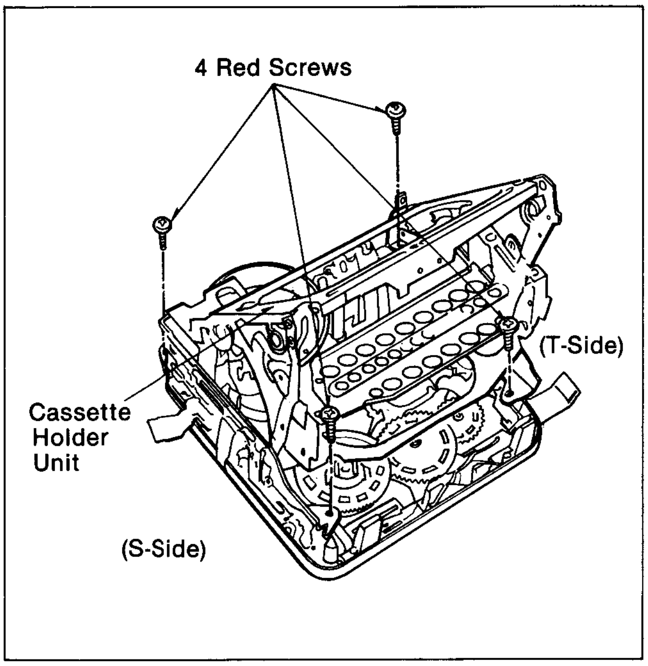

4 Red Screws
(T-Side)
Cassette Holder Unit
(S-Side)

Fig. M30

2-4. INTERCHANGEABILITY ADJUSTMENT

1. BACK TENSION ADJUSTMENT

* Equipment Required
Tension Meter
VHS–C Cassette Tape
Specification 18+3/−1.5g(16.5g~21g)

(1) Play back (remove the cassette tape cover) tape.
(2) Set Tension Meter at the measuring point and read the value.
(3) If the value is out of specification, change the hooking position of Tension Spring.
(4) Install Cassette Holder Unit.

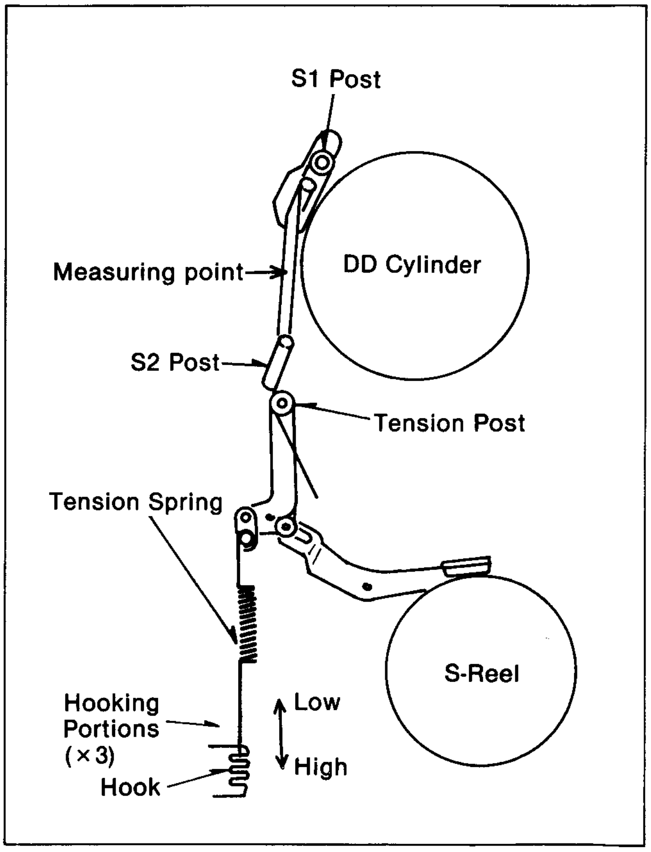

S1 Post
DD Cylinder
Measuring point
S2 Post
Tension Post
Tension Spring
S-Reel
Hooking Portions (×3)
Hook
Low
High

Fig. M31

2. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS AND A/C HEAD (PRELIMINARY ADJUSTMENT)

Confirmation of Tape Travel

(1) Playback a cassette tape (remove the cassette tape cover) and confirm that the tape travels without curling at upper and lower guides on posts S1,T1,T2 and T3.

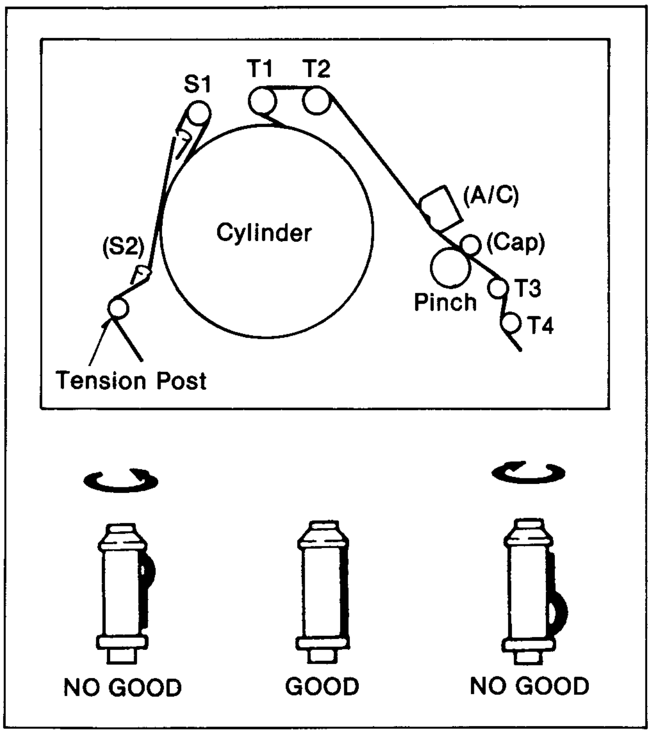

S1
T1
T2
Cylinder
(S2)
(A/C)
(Cap)
Pinch
T3
T4
Tension Post
NO GOOD
GOOD
NO GOOD

Fig. M32

(2) If curling is apparent, adjust the height of posts by turning the top of post With Hex Wrench.

(3) Looking at the lower edge of the control Head with the tape in motion, ensure that lower edge of the tape runs 0.25mm above the lower edge of control Head. If it doesn't, turn the A/C head height Adjustment Nut slightly in either direction as necessary to correct it.

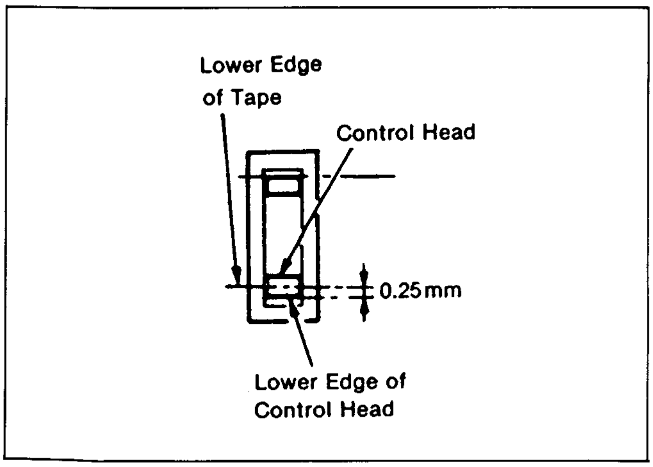

Lower Edge of Tape
Control Head
0.25mm
Lower Edge of Control Head

Fig. M33

3. TAPE INTERCHANEABILITY ADJUSTMENT

NOTE:

To perform these adjustments, make sure that the tracking control is set in the fixed position by Pressing both tracking Up/Down switches at the same time.

* Equipment Required
Dual Trace Oscilloscope
Alignment tape (VFM8180HUPF)
H–Position Adjustment Driver (VFK0743)
Asterisk Type Rench (VFK0824)

[AZIMUTH ADJUSTMENT OF A/C HEAD]

(1) Connect the oscilloscope to Audio Line Output.

(2) Play back the Monoscope portion (6KHZ,MONO of the Alignment tape.

(3) Adjust the Azimuth Adjustment screw on the A/C Head Unit so that output level is at a maximum.

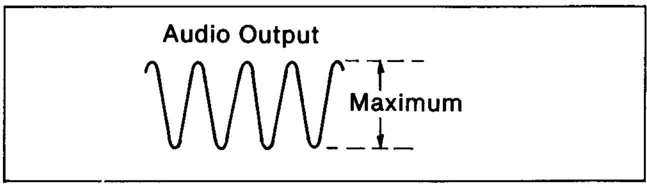

Audio Output
Maximum

Fig. M34

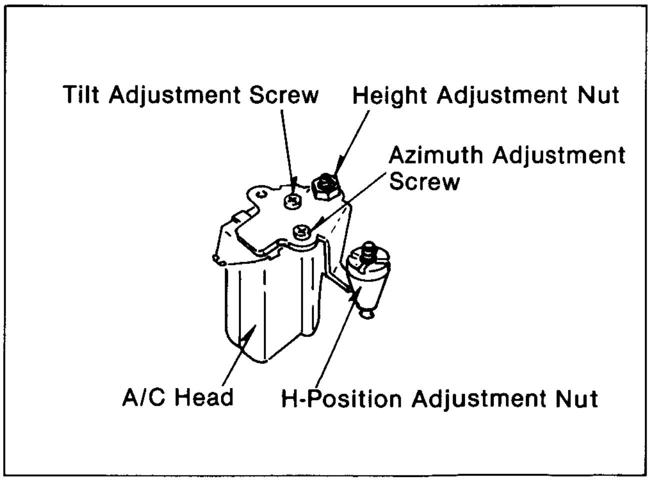

Tilt Adjustment Screw
Height Adjustment Nut
Azimuth Adjustment Screw
A/C Head
H-Position Adjustment Nut

Fig. M35

[HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD]

(1) Connect the oscilloscope to TP8002 or Pin 24 IC3001.
(2) Playback the monoscope portion of the alignment tape.
(3) Adjustment horizontal position by turning H-Position Adjustment Nut so that the envelope level is at a maximum.

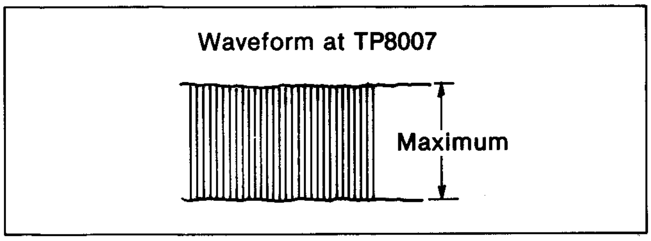

Waveform at TP8007
Maximum

Fig. M36

[CONFIRMATION/ADJUSTMENT OF ENVELOPE]

(1) Set the tracking control to the fixed position by pressing both tracking control Up/Down Switches at the same time, and connect the Oscilloscope to TP8002 or Pin 24 of IC3001.
(2) Play back the Monoscope portion of the Alignment Tape and adjust the height of S1 and T1 posts watching the scope display so that the RF envelope becomes as flat as possible.
(3) When the RF envelope is lacked at the beginning of the track, adjust height of S1 post.

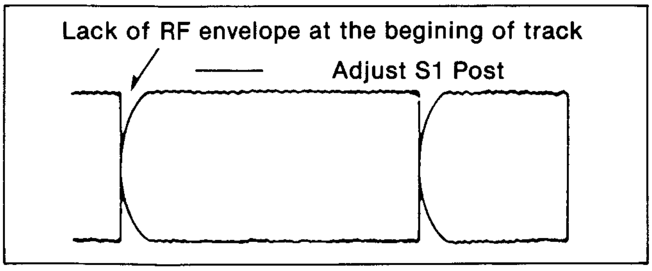

Lack of RF envelope at the begining of track
—— Adjust S1 Post

Fig. M37

(4) When the RF envelope is lacked at the end of the track, adjust height of T1 post.

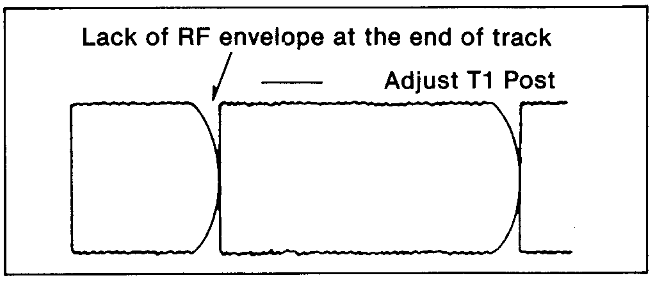

Lack of RF envelope at the end of track
—— Adjust T1 Post

Fig. M38

(5) When S2 and T1 Posts are adjusted properly, there is no lack of RF Envelope at the beginning or end of the track as shown below.

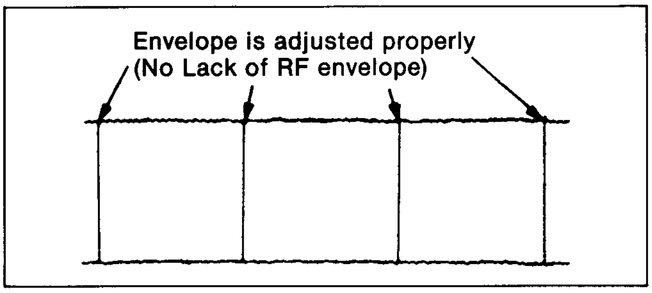
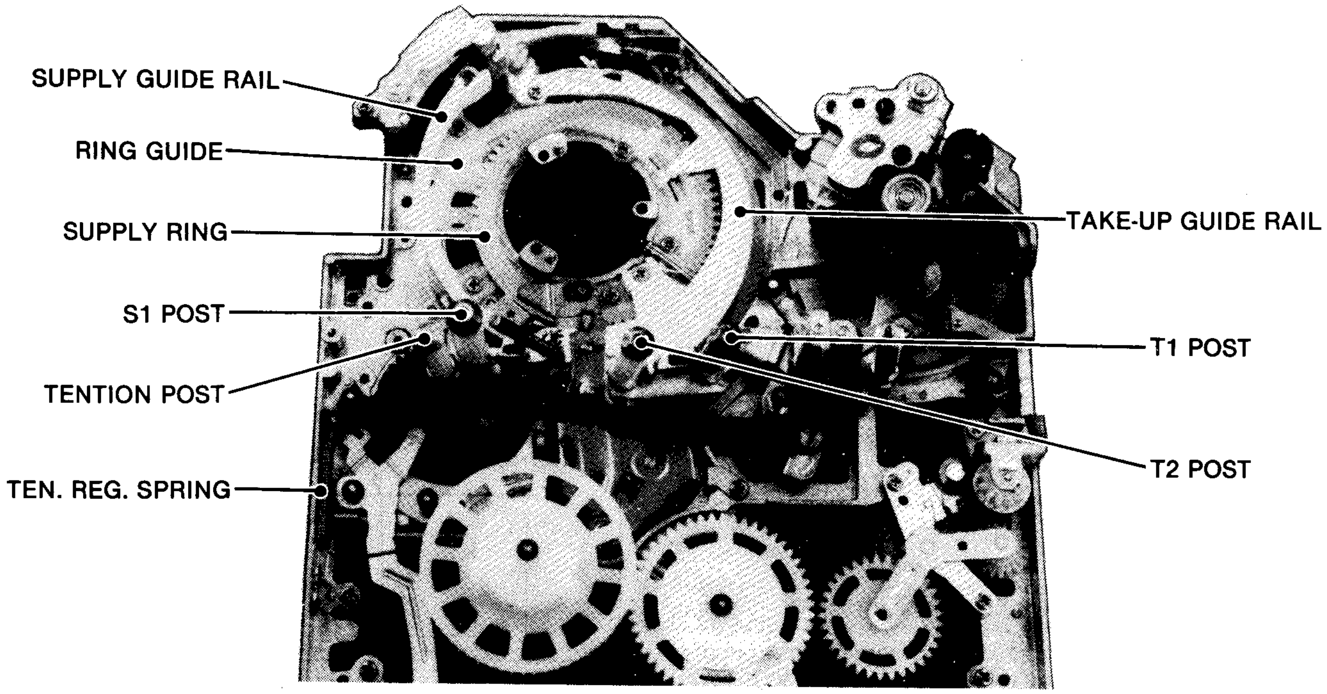

Envelope is adjusted properly
(No Lack of RF envelope)

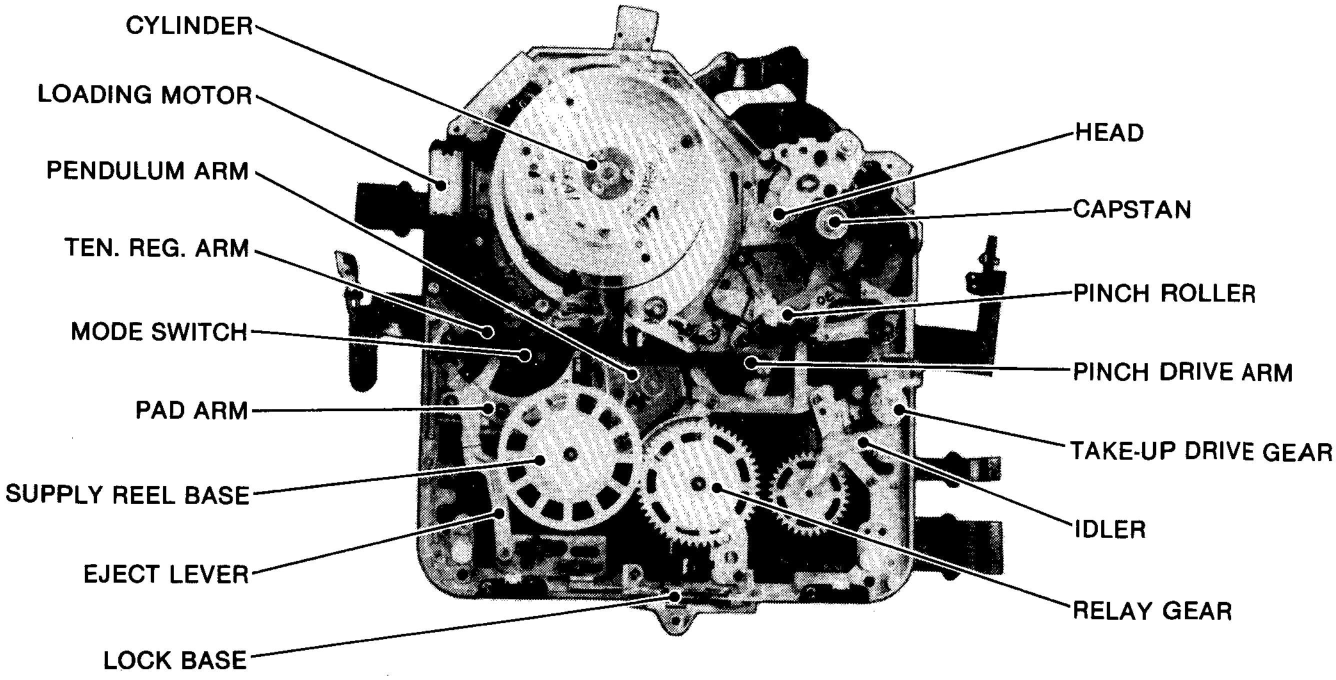
Fig. M39

① Movement of Mechanism

1. Name of Mechanism


SUPPLY GUIDE RAIL
RING GUIDE
SUPPLY RING
S1 POST
TENTION POST
TEN. REG. SPRING
TAKE-UP GUIDE RAIL
T1 POST
T2 POST

＊RING T is located underneath of RING GUIDE


CYLINDER
LOADING MOTOR
PENDULUM ARM
TEN. REG. ARM
MODE SWITCH
PAD ARM
SUPPLY REEL BASE
EJECT LEVER
LOCK BASE
HEAD
CAPSTAN
PINCH ROLLER
PINCH DRIVE ARM
TAKE-UP DRIVE GEAR
IDLER
RELAY GEAR

2. Movement to Mechanism

1. Loading operation

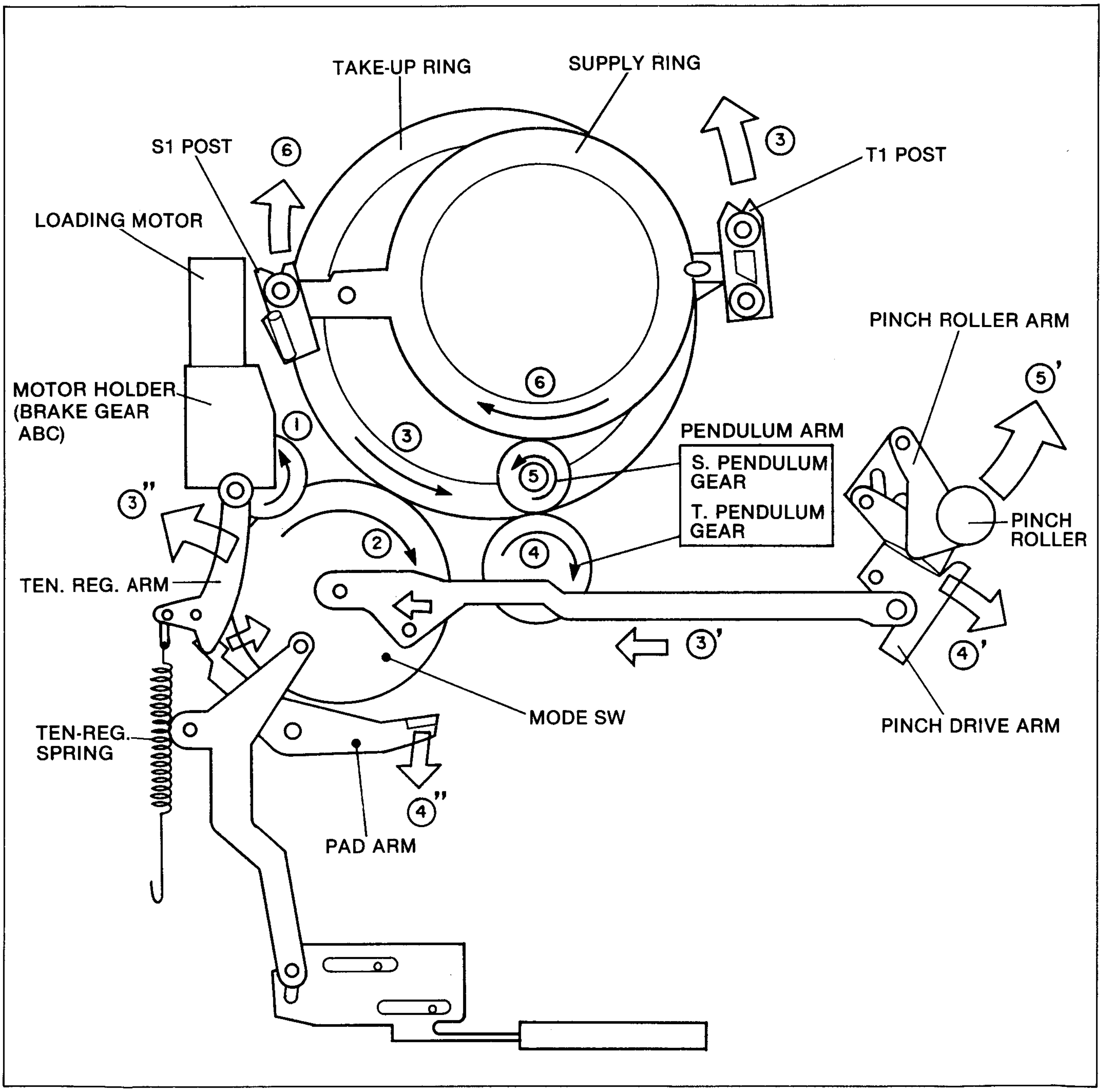

TAKE-UP RING
SUPPLY RING
S1 POST
⑥
③
T1 POST
LOADING MOTOR
PINCH ROLLER ARM
MOTOR HOLDER (BRAKE GEAR ABC)
⑥
⑤'
①
③
PENDULUM ARM
S. PENDULUM GEAR
T. PENDULUM GEAR
⑤
③"
②
④
PINCH ROLLER
TEN. REG. ARM
③'
④'
MODE SW
PINCH DRIVE ARM
TEN-REG. SPRING
④"
PAD ARM

Fig. 1 Loading Mechanism

- Motive power of loading motor is transferred by order of arrow mark.
  - Drive of loading post.
  - Heard Contact Pinchi Roller with capstan shaft. (Play Position)
  - Heard Contact Pad Arm with S. Reel table. (Play Position)

2. Eject operation

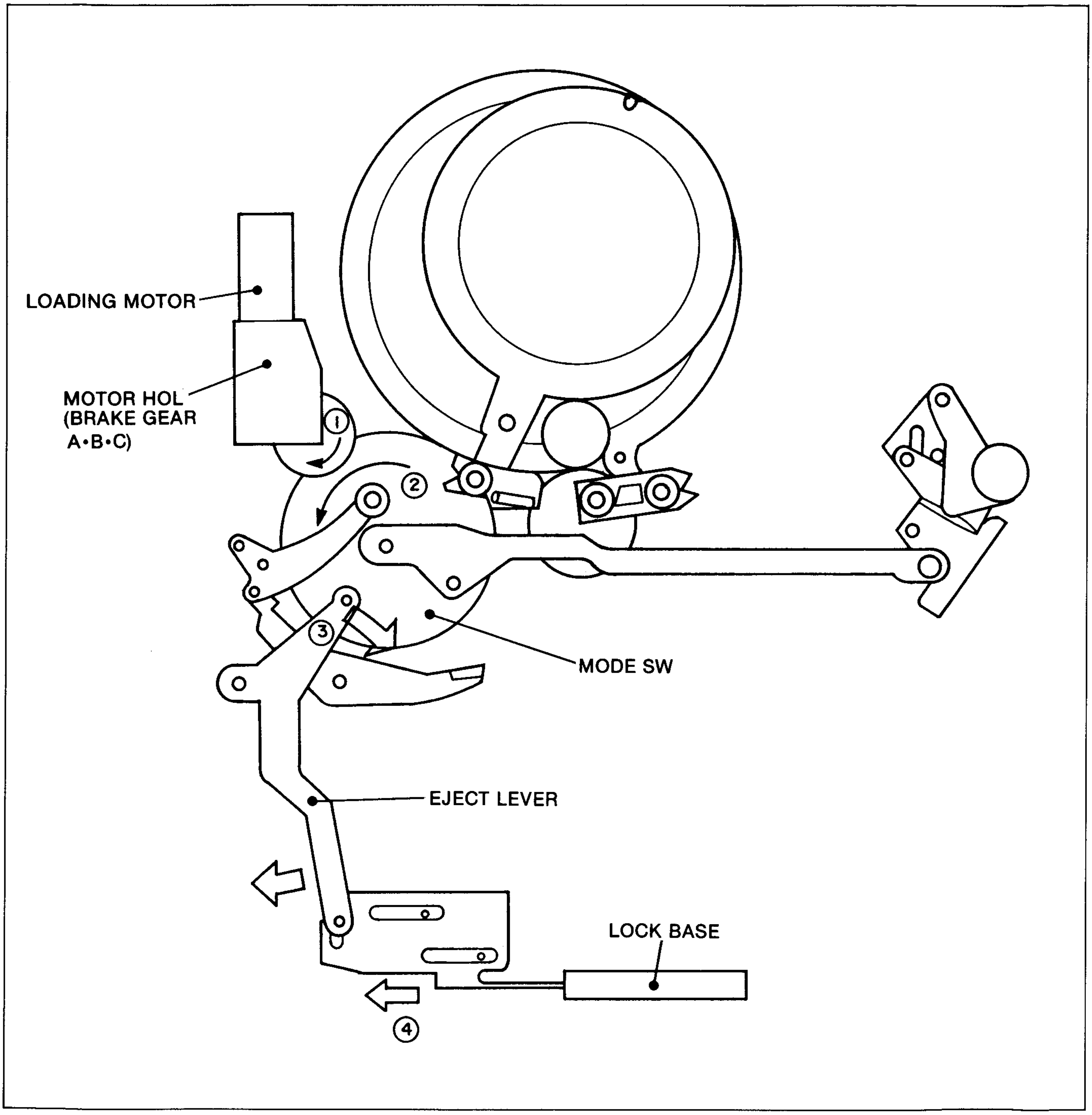

LOADING MOTOR
MOTOR HOL
(BRAKE GEAR
A•B•C)
①
②
③
④
MODE SW
EJECT LEVER
LOCK BASE

Fig. 2 Loading mechanism

- Motive power of loading motor is transferred by numerical order.
  After cassette up operation, those gears are moved to opposite of arrow's direction, to turn back stop1 condition.

3. Movement of Reel table

1. FF operation

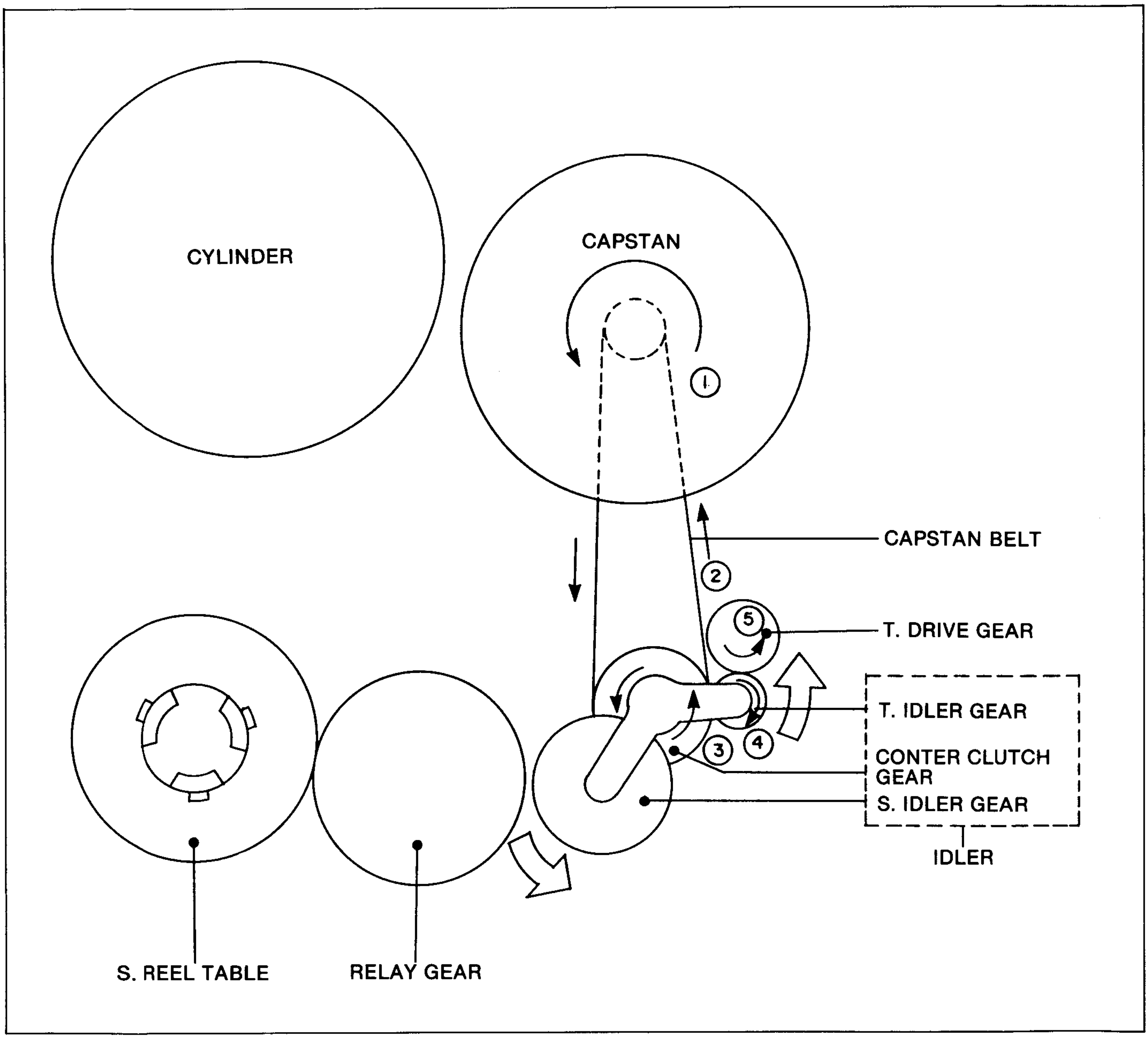

CYLINDER
CAPSTAN
①
CAPSTAN BELT
②
⑤
T. DRIVE GEAR
T. IDLER GEAR
③
④
CONTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 3 Take-Up side of Reel Drive

- Motive Power of Capstan motor is transferred to Idler (Center clutch Gear) through the capstan belt.
  At this time, position of Idler is decided by rotation of capstan motor.
  After that, Motive power is transferred by numerical order.
  Finaly, Take-up Reel is rotated by T. Drive Gear.
- Pad Arm is moved by Ten. Reg. Arm, and then contact with lower side of S. Reel table in order to apply back tension to tape.

2. REW operation

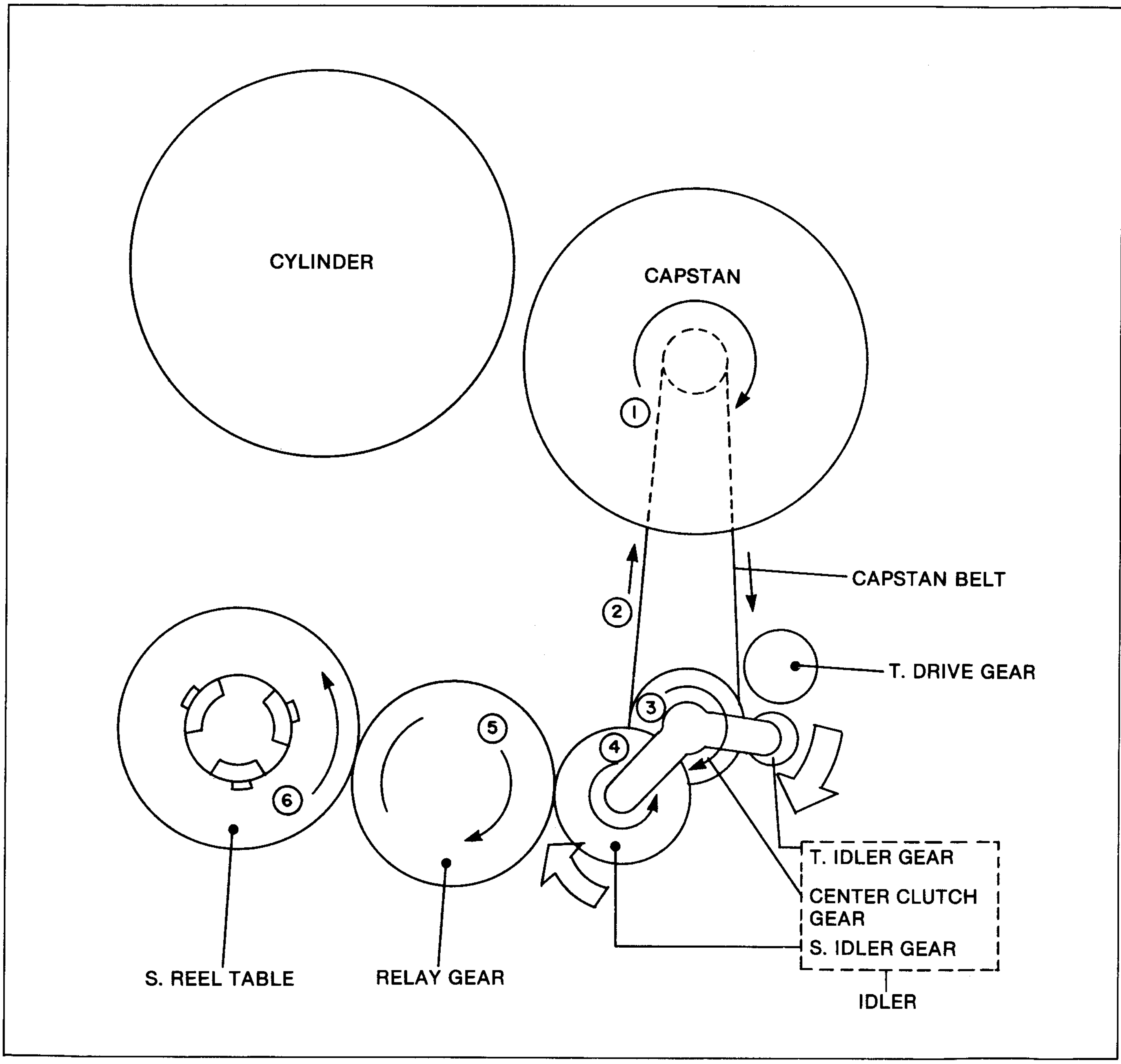

CYLINDER
CAPSTAN
①
②
③
④
⑤
⑥
CAPSTAN BELT
T. DRIVE GEAR
T. IDLER GEAR
CENTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 4 Supply side of Reel drive

- Motive power is transmited in numerical order.
- At this time, Idler is contacted to Relay Gear by capstan rotation.
- Also, back tention generate by contact Drive Gear T with REW Torgue spring (Including the Idler unit).

2 Alignment of Mechanism

Following mechanichal phase condition is important for mechanichal alignment.

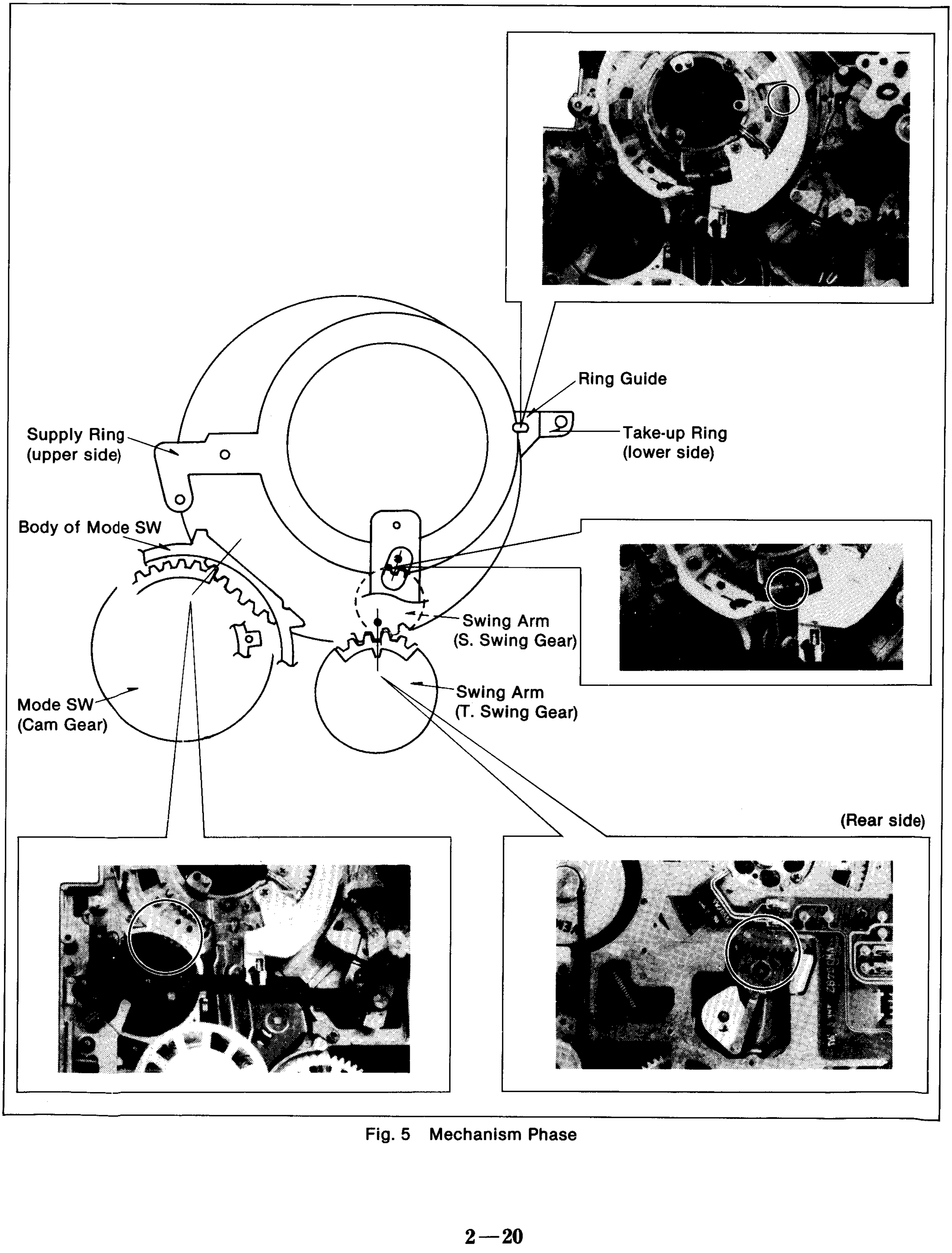

Ring Guide
Supply Ring (upper side)
Take-up Ring (lower side)
Body of Mode SW
Swing Arm (S. Swing Gear)
Mode SW (Cam Gear)
Swing Arm (T. Swing Gear)
(Rear side)

Fig. 5 Mechanism Phase

2-5. ELECTRICAL ADJUSTMENT PROCEDURES

2-5-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipment is required for adjustment of the CAMERA section.

1) TEST EQUIPMENT

1. Oscilloscope
   Dual Trace, 50MHz, 2mV/DIV
   10:1 Probe
   1:1 Probe
2. Digital Volt Meter of VTVM
3. Frequency Counter
4. Vectorscope
5. Light Meter
6. Tripod
7. Colour Video Monitor
8. Lighting
   140 foot–candles (1400lux) on the chart surface 3100 degrees K.

2) TOOLS

9. Reflection chart
   * Logarithmic Gray Scale Chart
   (Part No.:YWV2310RB99)
   * Colour Chip Chart
   (Part No.:YWV2100RB98)
   * Hunting Chart
   (Part No.:VFK0546)
   * J Chart & Ball Chart
   (Part No.:VFK0580)
   * Colour Bar Chart
   (Part No.:VFK0677)
10. Plastic Tip Driver
11. E.V.R. FIXTURE (Part No.:VFK0644)
    * ROM 8 (Part No.:VFK0701ROM8)

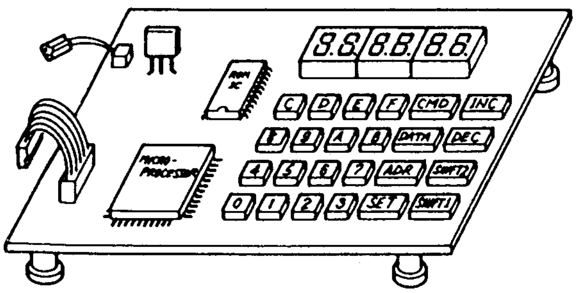


Fig. C1

12. Colour Temperature Conversion Filter
    * C12 Filter (Part No. VFK0374 or VFK0713)
    * C2 Filter (Part No. VFK0375 or VFK0716)
    * Movie Light Box VRD91MLB
    (including VFK0777 Gray Scale Chart)
13. Extension Cable
    * CONNECTION Cable for Measurement (24P)
    (Part No.VFK0734W)
    * EVR CONNECTION Cable (5P)
    (Part No.VFK0766A)
    @ 5
14. Camera Extension Cables
    For Camera Section
    *FRAT Cable (24P) (Part No.:VFK0825)
    *Extension Cable (32P) (Part No.:VFK0724)
    *Extension Cable (18P) (Part No.:VFK0698)
    *Extension Cable (17P) (Part No.:VFK0686)

(Standard Setting for Camera Adjustment)

The camera switches must be set in the following position for camera adjustment unless other wise specified each adjustment procedure.

1) White Balance Switch...White set
   (Refer to How to White Set)
   Auto Focus...Auto
   High speed shutter...OFF
   Fade...OFF
   Iris...ALC condition
   DIS...OFF
   D.Zoom...OFF
   Mode select SW...MANUAL
   BLC...OFF
3) Use 3100 degrees kelvin light source for lighting.
4) To trigger the oscilloscope, use Video output.
5) Service work for camera unit must be performed in a dust free location to maintain the lens cleanliness.

(How to set White Balance)

1) Aim the camera at white chart.
2) Push [SHIFT 1 + 4] simultaneously.

(Description of Command)

Selecting the communication for the type of data exchange performed between EVR Fixture and camcorder.

Command	Communication	Contents
02	EVR Fixture → EEPROM	Writing the data to address of EEPROM..(Lower Digit)
12	EVR Fixture → EEPROM	Writing the data to address of EEPROM. (Upper Digit)
04	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Lower Digit)
14	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Upper Digit)
08	EVR Fixture → Micro Computer (RAM)	Data transmission of EVR Fixture to Micro computer (RAM).
18	EVR Fixture → Micro computer (RAM)	Data tranmission of EVR Fixture to Micro computer (RAM).
09	Micro computer (RAM) → EVR Fixture	Reading out the data of Micro computer (RAM).
19	Micro computer (RAM) → EVR Fixture	Reading out the data of Micro computer (RAM).

Fig. C2

(Error Indication)

If an error is occurs while EVR is operating, EVR will display one of the error massages listed in Fig.C3 for 2 seconds and then return to the previous indication.

Error NO.	Contents of Error
1	Set the wrong command number
2	Set the wrong Address number
3	VD signal from camera is not coming.
4~6	Detect the error during communication
7	Writing error in the EEPROM of camera.
8	Communication error in the EEPROM of camera

Fig. C3

(Macro Operation)
The following operation is provided to transfer the data by one touch.
Buttons to be pushed at the same time.

<table>
<tr><th>No.</th><th>Buttons to be pushed
(Push these together)</th><th>Operations</th></tr>
<tr><td>1</td><td>SHIFT 1 + 0</td><td>Fully opens the IRIS.</td></tr>
<tr><td>2</td><td>SHIFT 1 + 1</td><td>Fully closes the IRIS.</td></tr>
<tr><td>3</td><td>SHIFT 1 + 2</td><td>IRIS is terned to Manual Condition.</td></tr>
<tr><td>4</td><td>SHIFT 1 + 3</td><td>IRIS is returned to Original Condition (AUTO).</td></tr>
<tr><td>5</td><td>SHIFT 1 + 4</td><td>White set.</td></tr>
<tr><td>6</td><td>SHIFT 1 + 5</td><td>Zooms to "WIDE" position.</td></tr>
<tr><td>7</td><td>SHIFT 1 + 6</td><td>Stops the Zoom.</td></tr>
<tr><td>8</td><td>SHIFT 1 + 7</td><td>Zooms to "TELE" position.</td></tr>
<tr><td>9</td><td>SHIFT 1 + 8</td><td>Changes the High Speed Shutter mode.
* Push the SHIFT 1 + 8 repeatedly to select the desired shutter speed.
The E.V.R indicates the High Speed Shutter mode in the address display detail as follows.
(Note: High Speed Shutter mode selected is displayed on Address LED only while the keys are depressed.)
<table>
<tr><th>ADDRESS LED INDICATION</th><th>MODE</th><th>ADDRESS LED INDICATION</th><th>MODE</th></tr>
<tr><td>0</td><td>Normal mode</td><td>4</td><td>1/1000 mode</td></tr>
<tr><td>1</td><td>1/120 mode</td><td>5</td><td>1/2000 mode</td></tr>
<tr><td>2</td><td>1/250 mode</td><td>6</td><td>1/4000 mode</td></tr>
<tr><td>3</td><td>1/500 mode</td><td>7</td><td></td></tr>
</table></td></tr>
<tr><td>10</td><td>SHIFT 1 + 9</td><td>Minimizes AGC Gain.</td></tr>
<tr><td>11</td><td>SHIFT 1 + A</td><td>Maximizes AGC Gain.</td></tr>
<tr><td>12</td><td>SHIFT 1 + B</td><td>AGC is returned to Original Condition.</td></tr>
<tr><td>13</td><td>SHIFT 1 + C</td><td>Focuses to "MANUAL" Condition.</td></tr>
<tr><td>14</td><td>SHIFT 1 + D</td><td>Focuses to "AUTO" Condition.</td></tr>
<tr><td>15</td><td>SHIFT 2 + 0</td><td>Turns FADE ON.</td></tr>
<tr><td>16</td><td>SHIFT 2 + 1</td><td>Turns FADE OFF.</td></tr>
<tr><td>17</td><td>SHIFT 2 + B</td><td>Automatically calculates colour detection and writes the data to the EEPROM (See Fig. C25).</td></tr>
<tr><td>18</td><td>SHIFT 2 + F</td><td>Writes the fixed data and all average data to the EEPROM. (Fig. C7)</td></tr>
</table>

Fig. C4

PREPARATION

1) Remove both side cases referring to disassembly method.
2) Connect the E.V.R. FIXTURE and measuring equipment as shown in Fig.C5.

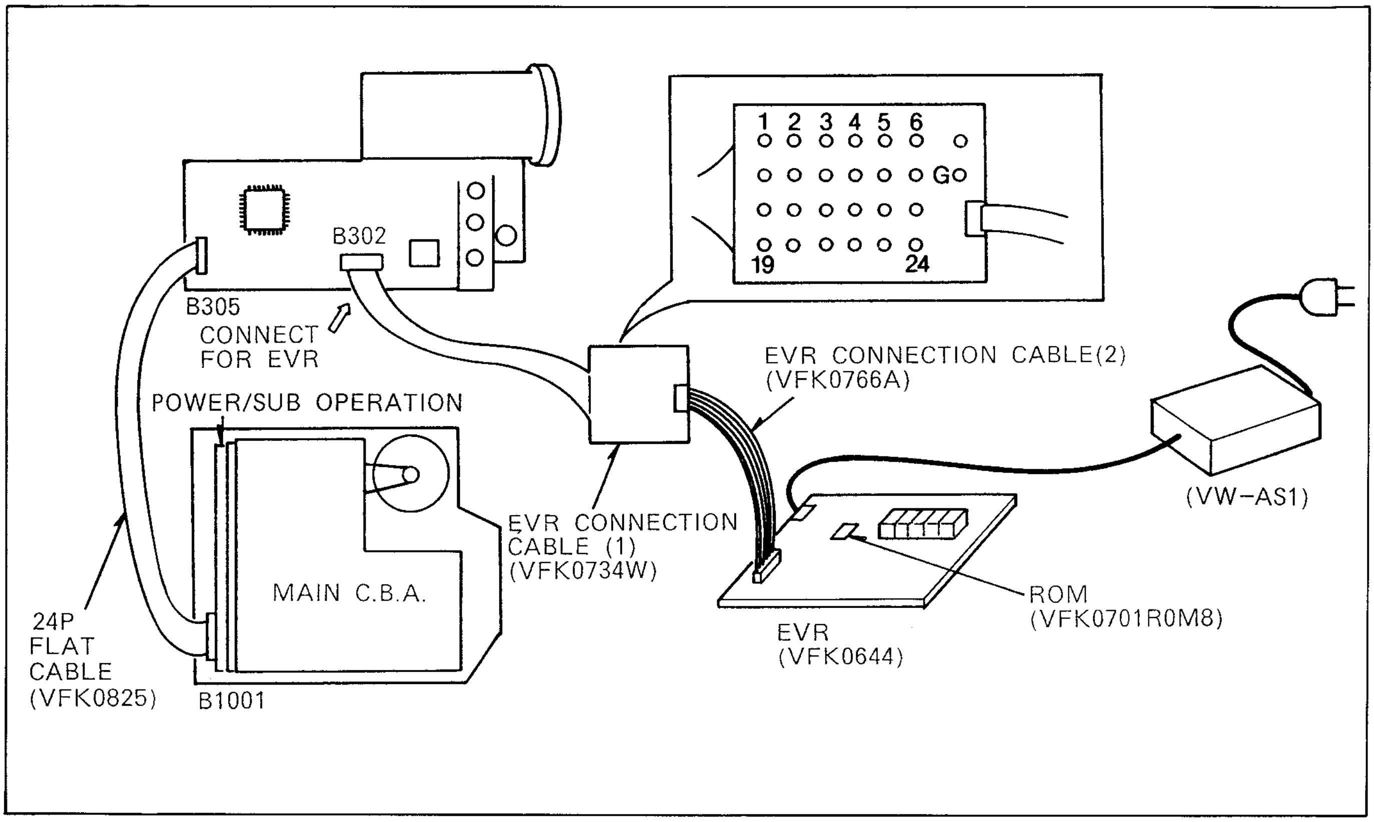

1 2 3 4 5 6
GO
19
24
B302
B305
CONNECT FOR EVR
POWER/SUB OPERATION
MAIN C.B.A.
24P FLAT CABLE (VFK0825)
B1001
EVR CONNECTION CABLE (1) (VFK0734W)
EVR CONNECTION CABLE(2) (VFK0766A)
(VW-AS1)
ROM (VFK0701R0M8)
EVR (VFK0644)

Fig. C5

1) Set the mode selector on the E.V.R. Fixture to "A" side. (Refer to Fig.C28)
2) Turn on the power SW of Movie camera.
3) Turn on the power SW of E.V.R. fixture. The LED Display on E.V.R. Fixture will indicate 08,80,00. If it does not indicated, push the Reset button and/or check the cable connections between EVR and CAMERA.

HOW TO READ THE TABLE FOR ADJUSTMENT

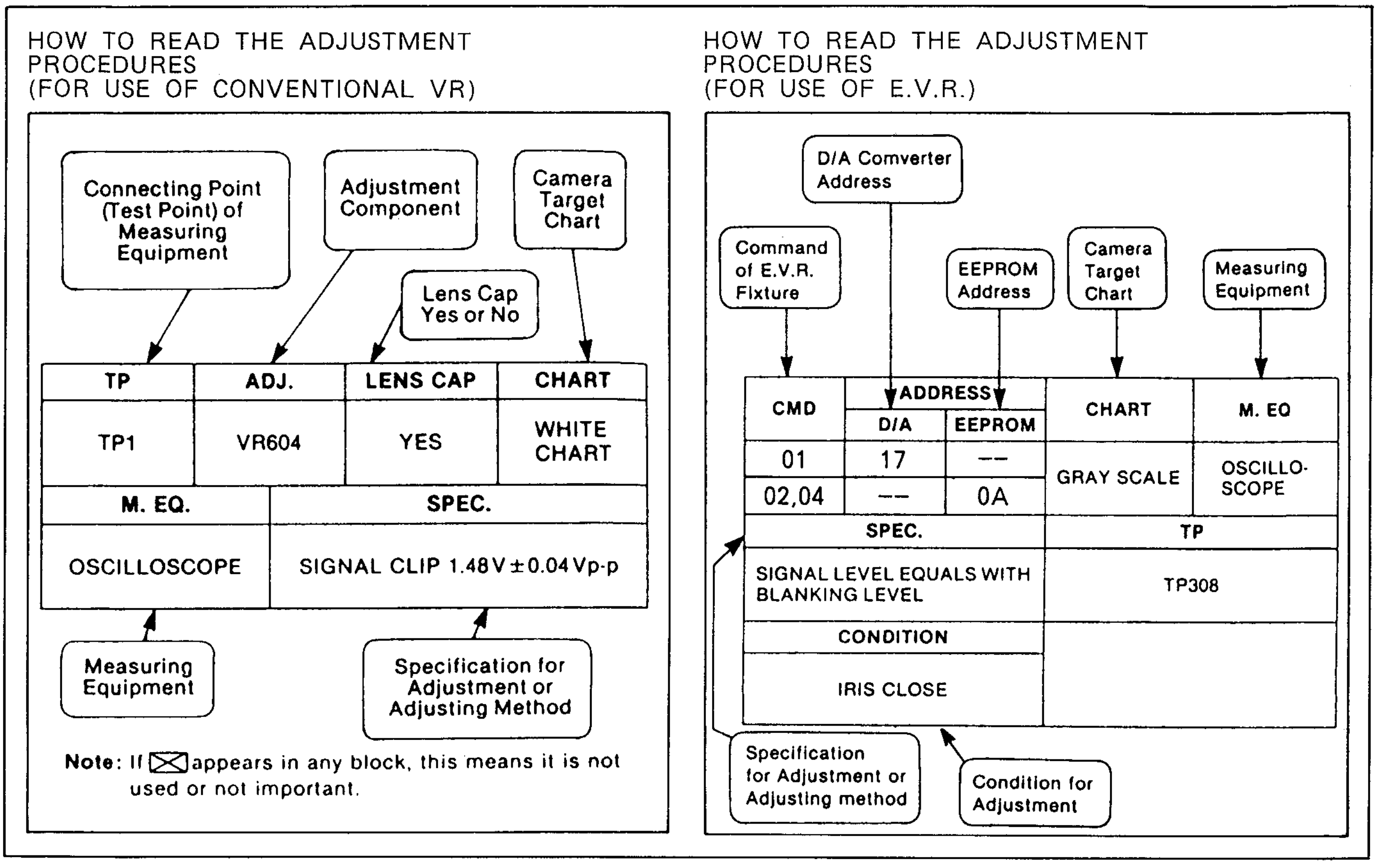

HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF CONVENTIONAL VR)
Connecting Point (Test Point) of Measuring Equipment
Adjustment Component
Camera Target Chart
Lens Cap Yes or No
TP
ADJ.
LENS CAP
CHART
TP1
VR604
YES
WHITE CHART
M. EQ.
SPEC.
OSCILLOSCOPE
SIGNAL CLIP 1.48V±0.04Vp-p
Measuring Equipment
Specification for Adjustment or Adjusting Method
Note: If ☒ appears in any block, this means it is not used or not important.
HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF E.V.R.)
D/A Comverter Address
Command of E.V.R. Fixture
EEPROM Address
Camera Target Chart
Measuring Equipment
CMD
ADDRESS
D/A
EEPROM
CHART
M. EQ
01
17
--
02,04
--
0A
GRAY SCALE
OSCILLO-SCOPE
SPEC.
TP
SIGNAL LEVEL EQUALS WITH BLANKING LEVEL
TP308
CONDITION
IRIS CLOSE
Specification for Adjustment or Adjusting method
Condition for Adjustment

Fig. C6

[1].WRITING FIXED DATA AND AVERAGE DATA IN REPLACEMENT EEPROM

[Purpose]
To program replacement EEPROM which are supplied unprogrammed.

[Symptom of mis–entered data]
Picture will not appear or will not be the correct picture.

[NOTE]
Write fixed data and average data only when replacing the EEPROM or when data was destroyed.

(Automatic writing)
1. Confirm that ROM of EVR has been replaced with the new one (Part No.VFK0701ROM8).
2. Push [SHIFT2]+[F] keys at the same time.
   (Fixed data and average data in Fig C7 are automatically written to the EEPROM.)

(Manual Writing)
Using the command "02" and "12" the data can be entered manually.

Example: Data input of address "00"
(Push [CMD],[0],[2]keys)
(Push [ADR],[0],[0]keys)
(Push [DATA],[5],[3]keys)
(Push [SET]key)

(A)ADDRESS MAP OF FIXED DATA AND AVERAGE DATA

		UPPER							
LOWER		0	1	2	3	4	5	6	7
0	H DIGIT	B-Y Gain 6000 32	B-Y MAT 6000 8C	B-Y WB 6000 3C	B-Y limit 6000 27	B-hili 6000 28	BACKUP 1 75	vap-c1 D0	C3
	L DIGIT	R-Y Gain 6000 42	R-Y MAT 6000 5E	R-Y WB 6000 36	R-Y limit 6000 27	R-hili 6000 54	BACKUP 1 82	vap-core 25	C3
1	H DIGIT	B-Y Gain 5100 32	B-Y MAT 5100 8C	B-Y WB 5100 60	B-Y limit 5100 28	B-hili 5100 6C	BACKUP 2 B6	Hap-core 02	C3
	L DIGIT	R-Y Gain 5100 42	R-Y MAT 5100 5E	R-Y WB 5100 41	R-Y limit 5100 27	R-hili 5100 54	BACKUP 2 C9	hi-1. ap FF	C3
2	H DIGIT	B-Y Gain 4500 38	B-Y MAT 4500 8A	R-Y WB 4500 77	B-Y limit 4500 6C	B-hili 4500 90	BACKUP 3 77	cnt2-up 06	C3
	L DIGIT	R-Y Gain 4500 3E	R-Y MAT 4500 5C	R-Y WB 4500 3F	R-Y limit 4500 3A	R-hili 4500 54	BACKUP 3 63	cnt2-dn D0	C3
3	H DIGIT	B-Y Gain 3600 44	B-Y MAT 3600 8B	B-Y WB 3600 85	B-Y limit 3600 77	B-hili 3600 A3	BACKUP 4 F0	Hap-gain 20	C5
	L DIGIT	R-Y Gain 3600 42	R-Y MAT 3600 5C	R-Y WB 3600 5D	R-Y limit 3600 54	R-hili 3600 6A	BACKUP 4 F7	Vap-gain 10	C5
4	H DIGIT	B-Y Gain 3300 44	B-Y MAT 3300 8B	B-Y WB 3300 85	C-FLAG TH 68	CSPDm 08	C5	c-g-ap 20	C5
	L DIGIT	R-Y Gain 3300 42	R-Y MAT 3300 5C	R-Y WB 3300 5D	CHSPD 04	CSPDs 19	C5	c-g-sw 55	C5
5	H DIGIT	B-Y Gain 3100 52	B-Y MAT 3100 87	B-Y WB 3100 94	B-limit 3100 87	B-hili 3100 B2	faftim 40	H-st/p 19	01
	L DIGIT	R-Y Gain 3100 36	R-Y MAT 3100 5C	R-Y WB 3100 73	R-limit 3100 6A	R-hili 3100 8D	EIS on/off 50	H-ed 00	C5
6	H DIGIT	B-Y Gain 2800 52	B-Y MAT 2800 87	B-Y WB 2800 A0	B-limit 2800 90	B-hili 2800 C0	ped-nrm 04	V-st/b 40	2A
	L DIGIT	R-Y Gain 2800 36	R-Y MAT 2800 5C	R-Y WB 2800 91	R-limit 2800 8D	R-hili 2800 B8	ped-dk F0	v-ed/p 18	C5
7	H DIGIT	STH FF	tap-adj(IR) 84	Bwb Llimit 3C	B-limit SKY 00	B-hili SKY 27	faflth 41	H-st/b 38	00
	L DIGIT	FF	tap-adj 23	Rwb Llimit 36	R-limit SKY 00	R-hili SKY 54	flag3(fade) FC	sw 1D	C5
8	H DIGIT	Hap gain 20	Hap-core 02	Bwb Hlimit 60	B-limit TREE 6C	B-hili TREE 90	FF	Y-base AC	00
	L DIGIT	Uap gain 12	sw 01	Rwb Hlimit 41	R-limit TREE 00	R-hili TREE 3A	flag8(fade W/B) 80	Vap-core 05	C5
9	H DIGIT	Houwa-U D0	HAP-NO 3C	B-Y WB 4900 60	BWBZ B 00	BWBZ C 00	Tree BK 03	cntlap 10	00
	L DIGIT	Houwa-L B0	P-LPF SW 11	R-Y WB 4900 41	RWBZ B 00	BWBZ C 00	P-WAITE 40	g-lap 72	C5
A	H DIGIT	fltim 3F	flth 40	DSP Ver 21	U puls 18	Baxish Th 00	st-alcp 05	D-Aagc 40	00
	L DIGIT	haloth 17	flthz 40	MODEL-NBR 46	d puls 98	Baxish Th 54	st-alcn 05	cntc 00	08
B	H DIGIT	B in 0C	tst-flg D0	TH 1 55	TH 3 6F	PALBR 00	loop g-n 26	Ychk h A0	40
	L DIGIT	R in 0C	ab set 93	TH 2 02	TH 4 10	LOOPTH 02	tap end 40	Ychk 1 28	33
C	H DIGIT	Outb1 9F	inal F3	Vst b 20	KOTEI A 20	agc-kei-1 38	agclpf 03	Yclpv 1 80	2A
	L DIGIT	Outb2 7B	ina2 E6	ST 7E	KOTEI B 20	agc-kei-2 20	Y-dark 00	darklv 1 00	4A
D	H DIGIT	Outb3 5C	ina3 CD	Seki C0	KOTEI C 18	agc-set 1 1C	ontil-dk FF	fli on 05	05
	L DIGIT	Outb4 4F	ina4 B3	AGC lim 13	KOTEI D 18	agc-set-2 A8	odown-dk 00	fli off 05	3C
E	H DIGIT	Outb0 0B	close 00	SW-set 83	th 4 00	lap-ref 20	CORE 06	FF	2A
	L DIGIT	T-gain 24	open 00	MIX 03	gadref FF	f cnd 48	FF	FF	05
F	H DIGIT	A/D IN A1	AF-ap 90	Vsub 84	R-YKB 45	LOW CLIP 70	FF	clpmax E0	2E
	L DIGIT	AF-Vn 5A	AF-AMP A2	PWM-B C5	Y-GAIN 19	B-YKB 47	FF	PAL flkg 41	0B

Fig.C7

2. VTR CARRIER BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	B-Y: B8 R-Y: BB	—		VECTOR-SCOPE
02, 12	—	B-Y: 4F (L) R-Y: 3F (H)		
SPEC.			TP	
CENTER OF VECTORSCOPE			VIDEO OUT	

[Purpose]
Set chroma signal black and white level.

[Symptom of Misadjustment]
With a large shift, colour is added to Black and white areas in the picture.

Note:
Refer to preparation for connection of EVR.

<Preparation>
1. Connect the vectorscope to Video out.
2. Aim the camera at white chart.
3. Push [SHIFT 1 + 4] keys simultaneously for white set.
4. Place the unit to "IRIS CLOSE" by pushing [SHIFT 1 + 1] keys simultaneously.
5. Push [SHIFT 1 + 9] keys simultaneously for set the AGC to "MINIMUM".

<Adjustment for B-Y>
Push following keys in order.
5. * [CMD], [1], [8].
 * [ADR], [B], [B].
6. Push [INC] or [DEC] keys until the vectors are in or close as possible to the centre, See Fig.C8.

<Data writing for B-Y>
Push following keys in order.
7. * [CMD], [0], [2].
 * [ADR], [4], [F].
 * [SET].

<Adjustment for R-Y>
Push following keys in order.
8 * [CMD], [1], [8].
 * [ADR], [B], [B].
9. * Push [INC] or [DEC] keys until the vectors are in or as close as possible to the centre, See Fig.C8.

<Data writing for R-Y>
Push following keys in order.
10. * [CMD], [1], [2].
 * [ADR], [3], [F].
 * [SET].
 * [SHIFT 1 + 3] (IRIS return to Auto Mode).
 * [SHIFT 1 + B] (AGC return to Original Mode).

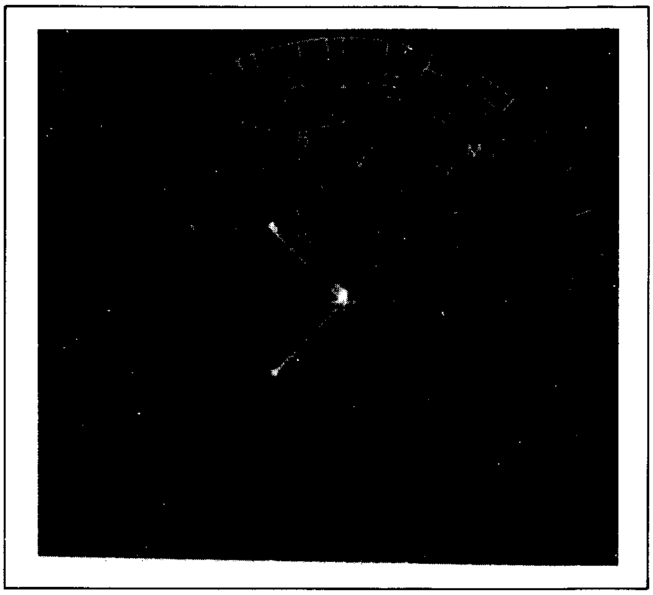
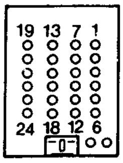


Fig. C8

3. HALL AMP ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	B5	—		D.V.M
	VR701	—		
02	—	IF		
SPEC.			TP	
VOLTAGE B302-9 (VFK0734W-PIN 9) = VOLTAGE B302-18 (VFK0734W-PIN 18) VOLTAGE B302-9 (VFK0734W-PIN 9) = VOLTAGE B302-7 (VFK0734W-PIN 7)			B302-9 (PIN Number 9 of VFK0734W) VFK0734W 	

[Purpose]
Hall Amp Adjustment

[Symptom of Mis-adjustment]
Hunting occurs or focus stops.

<Preparation>
1. Connect the jumper wire between B302-11 (VFK0734W-PIN11) and GND for Making IRIS close. (Do not use EVR for IRIS close)

<Adjustment 1>
Push the following keys in order.
2. * [CMD], [1], [8].
 * [ADR], [B], [5].
3. * Push [INC] or [DEC] keys until the voltage Level at B302-9 (VFK0734W-PIN9) become Vref1 +- 10mV. (Vref1 = B302-18 (VFK0734W-PIN1

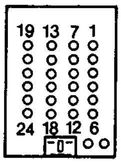
<Data Writing for Adjustment 1>
Push the following keys in order.

4. * [CMD], [0], [2].
   * [ADR], [1], [F].
   * [SET].
   * Remove the jumper wire.

<Adjustment 2>

5. Connect the jumper wire between B302-11 (VFK0734W-PIN11) and B302-14 (VFK0734W -PIN14) for fully open the IRIS.
6. Adjust the VR701 so that Voltage at B302-9 (VFK0734W-PIN9) become Vref3 +- 30mV. (Vref3 = B302-7 (VFK0734W-PIN7))
7. Remove the jumper wire.

4. PWM ADJUSTMENT

<table>
<tr><th rowspan="2">CMD</th><th colspan="2">ADDRESS</th><th rowspan="2">CHART</th><th rowspan="2">M. EQ.</th></tr>
<tr><th>RAM</th><th>EEPROM</th></tr>
<tr><td>18</td><td>B7</td><td>—</td><td rowspan="2"></td><td rowspan="2">D.V.M</td></tr>
<tr><td>02</td><td>—</td><td>2F (L)</td></tr>
<tr><th colspan="3">SPEC.</th><th colspan="2">TP</th></tr>
<tr><td colspan="3"></td><td colspan="2">B302-9
(VFK0734W-PIN 9)
VFK0734
 </td></tr>
</table>

<Preparation>

1. Set the IRIS to "OPEN". (Push [SHIFT 1 + 0]).
2. Connect the D.V.M. to B302-9 (VFK0734W-PIN9).

<Pre-Adjustment>

Push the following keys in order.

3. * [CMD], [1], [8].
   * [ADR], [B], [7].
4. Push [INC] or [DEC] keys until the Voltage level at B302-9 (VFK0734W-PIN9) becomes Vref1 +- 50mV. (Vref1 = Voltage at B302-7 (VFK0734W-PIN7) -500mV)
5. * [SHIFT 1 + 1] (Fully closes the IRIS).
6. * [SHIFT 1 + 0] (Fully opens the IRIS).

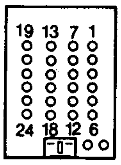
<Fine-Adjustment>
Push the following keys in order.

7. * [CMD], [1], [8].
   * [ADR], [B], [7].
8. Push [INC] or [DEC] keys until the Voltage level at B302-9 (VFK0734W-PIN9) becomes Vref2 +-20mV. (Vref2 = Voltage at B302-7-140mV).

<Data Writing>
Push the following keys in order.

9. * [CMD], [0], [2].
   * [ADR], [2], [F]. (Does not change the data).
   * [SET].
   * [SHIFT 1 + 3] (IRIS is return to Auto Mode).

5. ZOOM ENCODER AND FOCUS ENCODER ADJUSTMENT

<table>
<tr><th rowspan="2">CMD</th><th colspan="2">ADDRESS</th><th rowspan="2">CHART</th><th rowspan="2">M. EQ.</th></tr>
<tr><th>RAM</th><th>EEPROM</th></tr>
<tr><td>18</td><td>T: B4
W: B3</td><td>—</td><td rowspan="3">object:
1m (Hunting chart)</td><td rowspan="3">DIGITAL VOLTMETER</td></tr>
<tr><td>12</td><td>—</td><td>T: 1F (H)</td></tr>
<tr><td>02</td><td>—</td><td>W: OF (L)</td></tr>
<tr><th colspan="3">SPEC.</th><th colspan="2">TP</th></tr>
<tr><td colspan="3">To be calculated</td><td colspan="2" rowspan="3">B302-8 (VF0734W8)
B302-17 (VFK0734W-17)
VFK0734W
 </td></tr>
<tr><th colspan="3">CONDITION</th></tr>
<tr><td colspan="3">• Focus Manual
[SHIFT 1+C]
• Electric Zoom OFF</td></tr>
</table>

[Purpose]
Back Focus adjustment.

[Symptom of Mis-adjustment]
Lens System is not in focus through out all position of Zoom range.

Note:

1) Unless you replaced Zoom Encoder, 3rd lens (1) unit or 4th moving frame (1) unit, do not perform this adjustment. (Because this adjustment is critical).
2) Regarding the connection of EVR, refer to preparation. (Fig.C5)

<Initial Measurement and Preparation>

1. Check the voltage at B302-8(VFK0734W-PIN8) and B302-17(VFK0734W-PIN17) before changing the defective lens unit.
   For example:
   B302-8(VFK0734W-PIN8) : 3.652V
   B302-17(VFK0734W-PIN17) : 1.456V
2. Make note the potential difference between B302-8(VFK0734W-PIN8) and B302-17(VFK0734W-PIN17).
   For example:
   3.652-1.456 = 2.196V
3. Turn off the power SW.
4. Replace lens unit.
5. Loosen 2 screws of Focus Encoder C.B.A. and move the C.B.A. in centre position as shown in Fig.C9. Tighten 2 screws.

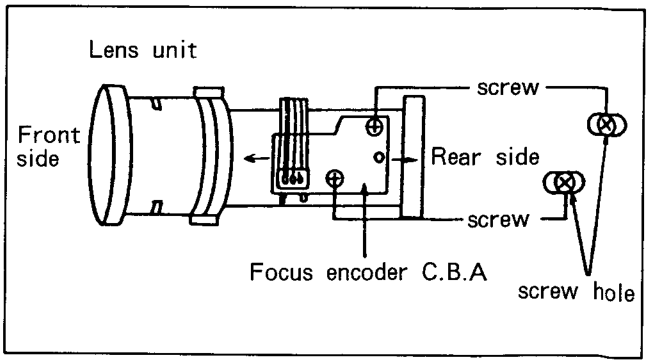


Fig. C9

6. Turn on power SW.

7. Set the Focus system to Manual Focus.
   (Pushing [SHIFT 1 + C] keys simultaneously.)

8. Zoom the lens to full TELE position.
   Push [SHIFT 1 + 7] keys simultaneously.

9. Aim the unit at Hunting chart from a distance of 1 meter.

10. Set the focus to full "−" position.
    * Press the Focus "−" button until movement stops.

<Adjustment for TELE Side>
Push the following keys in order.

11. * [CMD], [1], [8].
    * [ADR], [B], [4].

12. * Push [INC] or [DEC] keys until the lens focus is in correct position.

[Note 1]
The focus does not change while focus voltage is being adjusted on the EVR.
To see the focus adjustment, the lens unit must be zoomed from TELE to WIDE and back to TELE to activate the focus.
(Push [SHIFT 1 + 5] then push [SHIFT 1 + 7] keys.)

[Note 2]
Using the zoom controls on the EVR disables the Zoom controls of TELE/WIDE button on the camera.
Therefore, use EVR([SHIFT 1 + 5] or [SHIFT 1 + 7]) to move zoom for the TELE or WIDE position.

13. When lens focus comes to the correct position (at TELE Side), Push the following keys in order for store the data to EEPROM directly.
    * [CMD], [1], [2].
    * [ADR], [1], [F].
    * [SET].

    If the lens assembly cannot be focused, the Focus Encoder C.B.A. must be repositioned.
    Turn the focus ring clockwise.
    * If the focus improves, the Focus Encorder C.B.A. to the rear.
    * If the focus deteriorates, the Focus Encorder C.B.A. to the front.

    Return to Step(5) to reposition the Focus Encoder C.B.A..

<Adjustment for WIDE Side>

14. Check the Voltage at B302−8(VFK0734W−PIN8). (Example 3.662V)
15. Subtract the voltage that was noted at step(2) from the voltage at step(14).
    For example: 3.662 − 2.196 = 1.466
16. Push the following keys in order for adjust the voltage at B302−17(VFK0734W−PIN17) to 1.466V with EVR as follows.
    * [CMD], [1], [8].
    * [ADR], [B], [3].
    * Push [INC] or [DEC] until the voltage at B302−17(VFK0734W−PIN17) is 1.466V.

<Data writing for WIDE Side>
17. Push the following keys in order.
    (Take care not to change the data while Storing it into the EEPROM.)
    * [CMD], [0], [2].
    * [ADR], [0], [F].
    * [SET].

<Confirm the focus when zooming to Wide Side>
18. Turn the Power SW OFF then ON the Power SW.
19. Set the focus system to Manual focus.
    (Pushing [SHIFT1 + C] keys simultaneously.)
20. Check the back focus while Zooming.
    (If back focus is not good refer to following table.)

1) Focus is not good at full WIDE Side.

   Adjust the data of ADR "B3" at the full Wide Side keeping the voltage at B302−(17) within +− 0.05V of the voltage in Step(16).

   Check back focus While Zooming.
   * If back focus is good, go to Step(17).
   * If back focus is not good, stop the zoom at the position of bad focus.
     Press the focus "+" and/or "−" button.

     If focus improves when the "−" focus button is pushed, reposition the Focus Encoder C.B.A. to the front.

     If focus improves when the "+" focus button is pushed, reposition the Focus Encoder C.B.A. to the rear.

     Return to Step(5) to reposition the Focus Encoder C.B.A.

2) Focus is not good−between TELE and WIDE.
   Stop the zoom at the position of bad focus.
   Press the "+" and/or "−" button.
   * If focus improves when the "−" focus button is pushed, reposition the Focus Encoder C.B.A. to the front.
   * If focus improves when the "+" focus button is pushed, reposition the Focus Encoder C.B.A. to the rear.
     Return to Step(5) to reposition the Focus Encoder C.B.A..

Fig. C10

6. V–SUB ADJUSTMENT

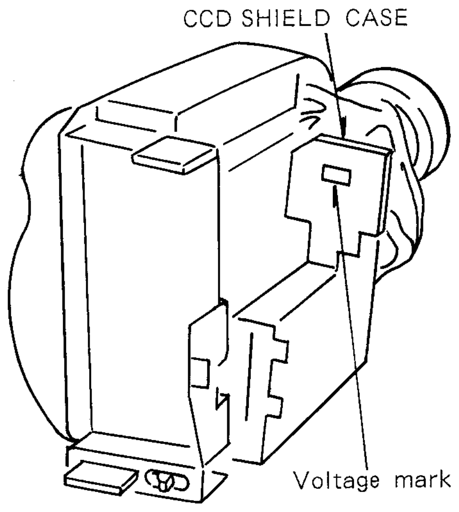
CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	B6	—		DIGITAL VOLTMETER
12	—	2F		

SPEC.	TP

[Purpose]
High luminance overflow adjustment.

[symptom of Mis–adjustment]
Colour loss.

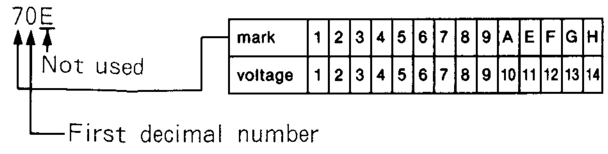
1. Read the voltage mark on CCD through the hole in the CCD SHIELD CASE as shown in Fig.C11.



For Example:
Voltage mark:70E

Fig. C11

2. This Voltage mark shows V–SUB voltage as shown in Fig.C12.



mark	1	2	3	4	5	6	7	8	9	A	E	F	G	H
voltage	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Fig. C12

For example:
"70E"-------->7.0V ....(V–SUB voltage)

3. Add V–SUB voltage to 0.6V.

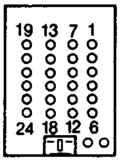
For example:
7.0V + 0.6V = 7.6V

4. Connect the Digital Voltmeter to B302–19 (VFK0734W–19).

<Adjustment>
Push the following keys in order.
*[CMD],[1],[8].
*[ADR],[B],[6].
*Push [INC], or [DEC] keys until signal level at VFK0734W–19 becomes the voltage of step 3. (For example: 7.6V)

<Data Writing>
Push the following keys in order.
*[CMD],[1],[2].
*[ADR],[2],[F].
*[SET].

7. PEDESTAL LEVEL ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	BA	—		OSCILLO-SCOPE
12	—	4F		
SPEC.		TP		
A=0mV±10mV		B302-6 (VFK0734W-6) VFK0734W  		

[Purpose]
Set black signal level.

[Symptom of Mis–adjustment]
The picture is too bright or too dark.

<Preparation>
1. Cover the lens.
   Push [SHIFT 1 + A] keys (Maximizes AGC Gain).
   Push [SHIFT 1 + 2] keys (Making IRIS manual condition).
2. Connect the oscilloscope to B302–6(VFK0734W–PIN6).

<Adjustment>
Push the following keys in order.
3. * [CMD], [1], [8].
   * [ADR], [B], [A].
4. * Push [INC] or [DEC] keys until the "A" level is minimized, as shown in Fig.C14.

<Data writing>
Push the following keys in order.
5. * [CMD], [1], [2].
   * [ADR], [4], [F].
   * [SET].
6. * [SHIFT 1 + B]. (AGC is returned to Original Condition.)
   * [SHIFT 1 + 3]. (IRIS is returned to Original Condition.)

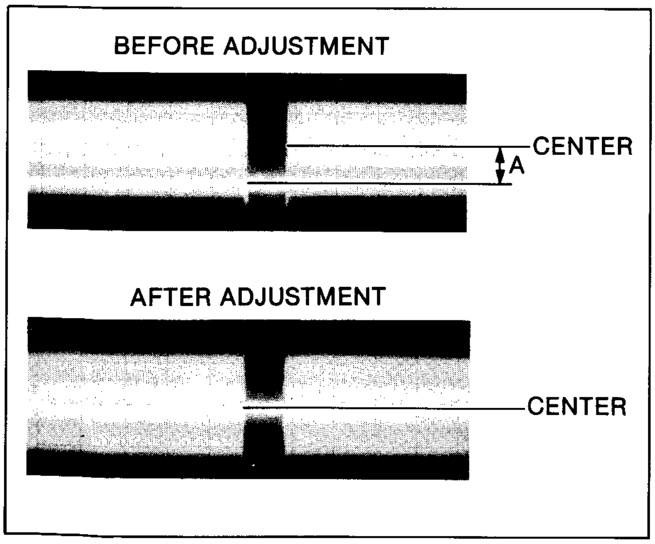
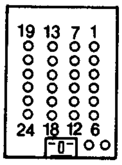


Fig.C13

8. AGC ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	BC	—	GRAY SCALE CHART	OSCILLO-SCOPE
12	—	6A		
SPEC.		TP		
250mV±20mV		B302-5 (VFK0734W-PIN 5) B302-20 (VFK0734W-PIN 20) VFK0734W  		

[Purpose]
Set standard signal gain.

[Symptom of Mis–adjustment]
The picture is sometimes too dark or too bright.

<Preset for AGC Adjustment>

1. Push [SHIFT 1 + 2] keys (IRIS is turned to Manual Condition.)
2. Aim the camera at Gray Scale Chart.
3. Connect the Oscilloscope to B302–5(VFK0734W–PIN5).

<Pre set 1–Rough Adjustment>
Push the following keys in order.
4. * [CMD], [1], [8].
   * [ADR], [D], [F].
5. * Push [INC] or [DEC] keys until signal level at B302–5(VFK0734W–PIN5) is 250 +– 10mV as shown in Fig. C14.

<Preset 2–Fine Adjustment>
Push the following keys in order.
6. * [CMD], [1], [8].
   * [ADR], [D], [E].
7. * Push [INC] or [DEC] keys until signal level at B302–5(VFK0734W–PIN5) is 250 +– 10mV as shown in Fig.C14.

<AGC Adjustment>
Push the following keys in order.
6. * [CMD], [1], [8].
   * [ADR], [B], [C].
7. * Push [INC] or [DEC] keys until the signal level at B302–20(VFK0734W–PIN20) is 250 +– 20mV as shown in Fig.C15

<Data Writing>
Push the following keys in order.
8. * [CMD], [1], [2].
   * [ADR], [6], [A].
   * [SET].
9. * [SHIFT 1 + 3] (IRIS is return to Original Condition)

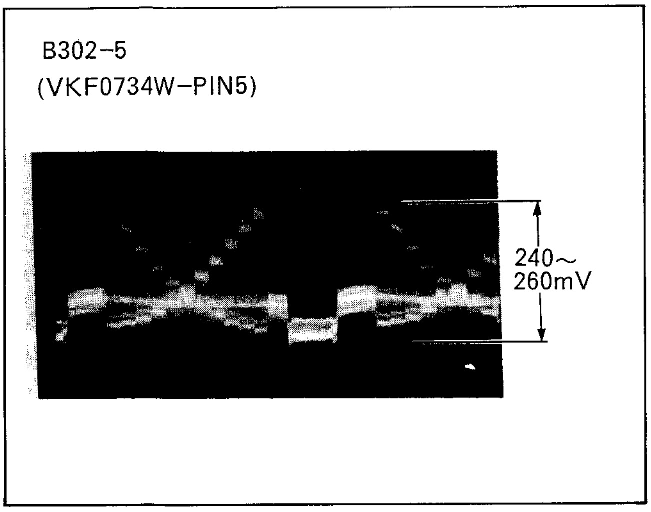


Fig. C14

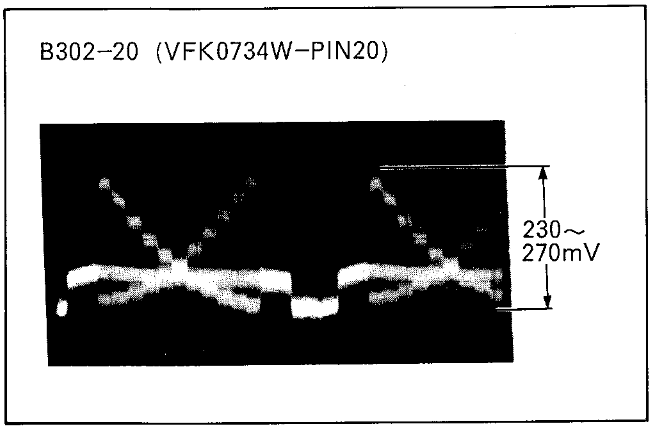
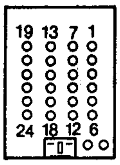


Fig. C15

9. A/D INPUT LEVEL ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	B1	—	GRAY SCALE CHART	OSCILLO-SCOPE
12	—	0F		
SPEC.			**TP**	
1.2V±40mV			B302-5 (VFK0734W-PIN 5) B302-6 (VFK0734W-PIN6) 	

Note:
Perform this adjustment after finishing the AGC ADJUSTMENT.

[Purpose]
A/D converter input Level adjustment.

[Symptom of Mis-adjustment]
The picture becomes too dark or too bright.

<Preset for A/D Input Level Adjustment>

1. Push [SHIFT 1 + 2] keys (IRIS is turned to Manual Condition.)
2. Aim the camera at Gray Scale Chart.
3. Connect the Oscilloscope to B302-5(VFK0734W-PIN5).

<Pre set 1-Rough Adjustment>
Push the following keys in order.

4. * [CMD], [1], [8].
   * [ADR], [D], [F].
5. * Push [INC] or [DEC] keys until the signal level at B302-5(VFK0734W-PIN5) is 250 +-10mV as shown in Fig.C16.

<Preset 2-Fine Adjustment>
Push the following keys in order.

6. * [CMD], [1], [8].
   * [ADR], [D], [E].
7. * Push [INC] or [DEC] keys until the signal level at B302-5(VFK0734W-PIN5) is 250 +-10mV as shown in Fig.C16.

<A/D Input level Adjustment>
Push the following keys in order.

8. * [CMD], [1], [8].
   * [ADR], [B], [1].
9. * Push [INC] or [DEC] keys until the signal level at B302-6(VFK0734W-PIN6) is 1.2V +-40mV as shown in Fig.C17.

<Data Writing>
Take care not to change the data while storing it into EEPROM.
Push the following keys in order.

10. * [CMD], [1], [2].
    * [ADR], [0], [F].
    * [SET].
11. Push [SHIFT 1 + 3] keys (IRIS is return to Original Condition.)

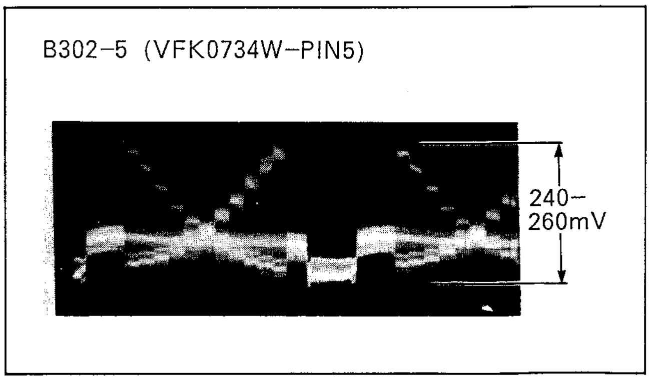


Fig. C16

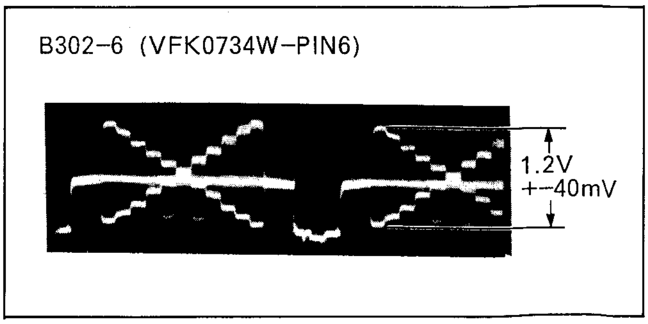
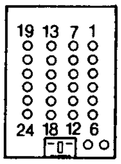


Fig. C17

10. ALC ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	D4	—	GRAY SCALE CHART	OSCILLO-SCOPE
02	—	2C		
SPEC.			TP	
1.20V±40mV			B302-6 (VFK0734W-PIN 6) 	

Note:
Perform this adjustment after finishing the AGC and A/D INPUT LEVEL ADJUSTMENT.

[Purpose]
ALC level adjustment.

[Symptom of Mis–adjustment]
The picture is too white or too dark.

<Preparation>

1. Set the IRIS to Auto [SHIFT 1 + 3].
2. Aim the camera at Gray Scale Chart.
3. Connect the oscilloscope to B302–6(VFK0734W–PIN6).

<Adjustment>
Push the following keys in order.

4. * [CMD], [1], [8].
   * [ADR], [D], [4].
5. * Push [INC] or [DEC] keys until the signal level at B302–6(VFK0734W–PIN6) is 1.2V +– 40mV as shown in Fig.C18.

<Data Writing>
Take care not to change the data while storing it into EEPROM.
Push the following keys in order.

6. * [CMD], [0], [2].
   * [ADR], [2], [C].
   * [SET].

B302–6 (VFK0734W–PIN6)

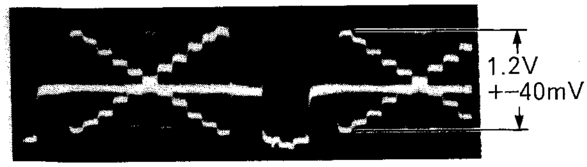
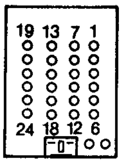


Fig. C18

11. Y CLIP LEVEL ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
18	B9	—	WHITE CHART	OSCILLO-SCOPE
02	—	3F		
SPEC.			TP	
V/S=7.7:3			B302-4 (VFK0734W-PIN 4) VFK0734W 	

[Purpose]
Signal raito of visual and sync becomes 7.7 : 3.

[Symptom of Mis–adjustment]
Prevent saturation from high illumination.

<Preparation>

1. Set the IRIS to "OPEN". [SHIFT1 + 0].
2. Aim the camera at white chart.
3. Connect the Oscilloscope to B302–4. (VFK0734W–PIN4)

<Adjustment>
Push the following keys in order.

4. * [CMD], [1], [8].
   * [ADR], [B], [9].
5. * Push [INC] or [DEC] keys until ratio of V and S is 7.7 : 3 as shown in Fig.C19.

<Data Writing>
Take care not to change the data while storing it into EEPROM.
Push the following keys in order.

6. * [CMD], [0], [2].
   * [ADR], [3], [F].
   * [SET].
7. * [SHIFT 1 + 3] (IRIS return to Auto Mode)

B302–4 (VFK0734W–PIN4)

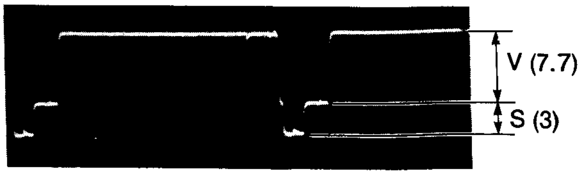


Fig.C19

12. INDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
09	BB (R-Y) AB (B-Y)	—	WHITE CHART	VECTOR-SCOPE
02	—	25 (R-Y)		
12	—	25 (B-Y)		
SPEC.			TP	
CENTRE OF VECTORSCOPE			VIDEO OUT	

[Purpose]
Set standard white level for each colour temperature.

[Symptom of Mis-adjustment]
White is bluish or reddish.

<Preparation>
1. Connect the Video out to Vectorscope.
2. Aim the camera at white chart.
And Push [SHIFT 1 + 4] for white set.
(Please confirm, vector came to centre)

<Read Out the data for R-Y>
Push the following keys in order.
3. * [CMD], [0], [9].
* [ADR], [B], [B].
* [SET].
(When the pushed [SET] key, Data LED of EVR indicate the data of white balance for R-Y)

<Data Writing for R-Y>.
Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.
4. * [CMD], [0], [2].
* [ADR], [2], [5].
* [SET].

<Read Out the data for B-Y>

Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.
5. * [CMD], [0], [9].
* [ADR], [A], [B].
* [SET].

(When the pushed [SET] key, Data LED of EVR indicate the data of white balance for B-Y)

<Data writing for B-Y>
Take care not change the data while storing it into the EEPROM.
Push the following keys in order.
6. * [CMD], [1], [2].
* [ADR], [2], [5].
* [SET].

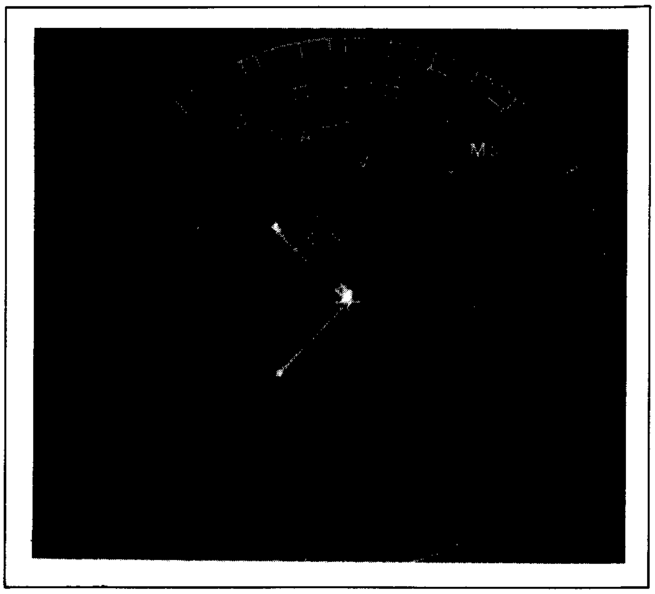


Fig.C20

13. COLOUR PHASE AND GAIN ADJUSTMENT (INDOOR)

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
08	95 (R-Y G) 97 (R-Y P) 94 (B-Y G) 96 (B-Y P)	—	COLOUR BAR CHART	VECTOR-SCOPE
02	—	05 (R-Y G) 15 (R-Y P)		
12	—	05 (B-Y G) 15 (B-YP)		
SPEC.			TP	
RED: 102+−3 degree/PHASE 200%+−10%/GAIN (RED/BURST) 165+−3 degree/PHASE 104%+−10%/GAIN (Yellow/BURST)			VIDEO OUT	

Note:
Be sure to carry out the Indoor White Balance Adjustment before doing this Adjustment.

1. Aim the camera at Colour Bar Chart.
2. Connect the Video out to vectorscope.

<R-Y GAIN>
(Step3 to 5 are R-Y Gain Adjustment)

Push the following keys in order.
3. * [CMD], [0], [8].
* [ADR],[9],[5].
4. Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C21.

<Data Writing for R–Y Gain>

Take care not change the data while storing it into the EEPROM.

Push the following keys in order.

5. * [CMD], [0], [2].
   * [ADR], [0], [5].
   * [SET].

<R–Y PHASE>

(Step6 to 8 are R–Y Phase Adjustment)

Push the following keys in order.

6. * [CMD], [0], [8].
   * [ADR], [9], [7].
7. * Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C21.

<Data Writing for R–Y Phase>

Take care not to change the data while storing it into the EEPROM.

Push the following keys in order.

8. * [CMD], [0], [2].
   * [ADR], [1], [5].
   * [SET].

<B–Y Gain>

(Step9 to 11 are B–Y Gain Adjustment)

Push the following keys in order.

9. * [CMD], [0], [8].
   * [ADR], [9], [4].
10. * Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C21.

<Data Writing for B–Y GAIN>

Take care not to change the data while storing it into the EEPROM.

Push the following keys in order.

11. * [CMD], [1], [2].
    * [ADR], [0], [5].
    * [SET].

<B–Y PHASE>

(Step12 to 14 are B–Y PHASE Adjustment)

Push the following keys in order.

12. * [CMD], [0], [8].
    * [ADR], [9], [6].
13. * Push [INC] or [DEC] keys until the phase of red and Yellow Vectors are as close as possible to Spec. See Fig.C21.

<Data Writing for B–Y PHASE>

Take care not to change the data while storing it into the EEPROM.

Push the following keys in order.

14. * [CMD], [1], [2].
    * [ADR], [1], [5].
    * [SET].
15. Repeat the Step (3) to Step (14) until the vectors are within Spec.

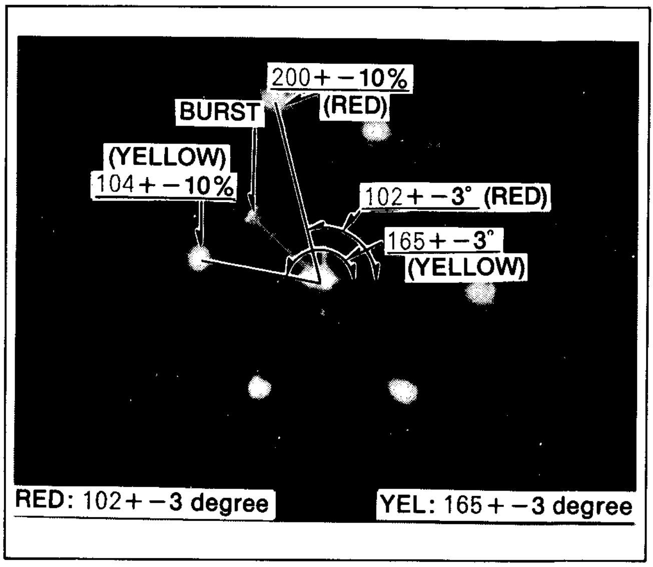


Fig.C21

14. OUTDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
09	BB (R-Y) AB (B-Y)	—	WHITE CHART	VECTOR-SCOPE
02	—	21 (R-Y)		
12	—	21 (B-Y)		

SPEC.	TP
VECTOR COMES CENTRE OR WAVEFORM IS MINIMIZED	VIDEO OUT
CONDITION	
TEMPERATURE CONVERSION FILTER: VFK0713 (C12) VFK0716 (C2) IRIS: ALC	

[Purpose]

Set standard white level for each colour temperature.

[Symptom of Mis–adjustment]

White is bluish or reddish.

<Preparation>

1. Connect the Video Out to Vectorscope.
2. Cover the lens with colour temperature conversion filter VFK0713 and VFK0716 to imitate the outdoor lighting.
3. Aim the camera at white chart, and push [SHIFT 1 + 4] keys for white set. (Confirm, vectors came, to center)

<Read Out the data for R−Y>

Push the following keys in order.

4. * [CMD], [0], [9].
   * [ADR], [B], [B].
   * [SET].
   (When the pushed [SET] key, Data LED of EVR indicate the data of white balance for R−Y)

<Data Writing for R−Y>

Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

5. * [CMD], [0], [2].
   * [ADR], [2], [1].
   * [SET].

<Read Out the data for B−Y>
Push the following keys in order.

6. * [CMD], [0], [9].
   * [ADR], [A], [B].
   * [SET].

   (When the pushed [SET] key, data LED of EVR indicate the data of white balance for B−Y)

<Data Writing for B−Y>
Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

7. * [CMD], [1], [2].
   * [ADR], [2], [1].
   * [SET].

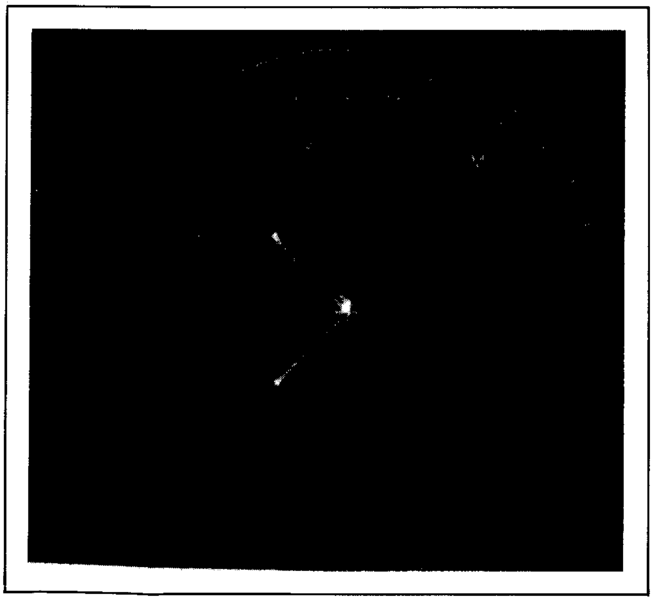


Fig.C22

15. COLOUR PHASE AND GAIN ADJUSTMENT (OUTDOOR)

CMD	ADDRESS		CHART	M. EQ.
	RAM	EEPROM		
08	95 (R-Y G) 97 (R-Y P) 94 (B-Y G) 96 (B-Y P)	—	COLOUR BAR CHART	VIDEO OUT
02	—	01 (R-Y G) 11 (R-Y P)		
12	—	01 (B-Y G) 11 (B-YP)		

SPEC.	TP
VECTORSCOPE	RED: 102+−3 degree/ PHASE, 190%+−10%/ GAIN (Red/BURST) YEL: 166+−3 degree/ PHASE, 100%+−10%/ GAIN (Yellow/BURST)

Note:
Be sure to carry out the outdoor white balance Adjustment before doing this adjustment.

<Preparation>
1. Connect the Video output to vectorscope.
2. Aim the camera at colour bar chart and cover the lens with colour temperature conversion filter VFK0713 and VFK0716 to imitate the outdoor lighting.

<R−Y Gain>
(Step3 to 5 are R−Y Gain Adjustment)

Push the following keys in order.

3. * [CMD], [0], [8].
   * [ADR], [9], [5].
4. * Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C22.

<Data Writing for R−Y Gain>
Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

5. * [CMD], [0], [2].
   * [ADR], [0], [1].
   * [SET].

<R−Y PHASE>
(Step6 to 8 are R−Y Phase Adjustment)

Push the following keys in order.

6. * [CMD], [0], [8].
   * [ADR], [9], [7].
7. * Push the [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C23.

<Data Writing for R-Y Phase>

Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

8. * [CMD], [0], [2].
   * [ADR], [1], [1].
   * [SET].

<B-Y Gain>
(Step9 to 11 are B-Y Gain Adjustment)

Push the following keys in order.

9. * [CMD], [0], [8].
   * [ADR], [9], [4].
10. * Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C23.

<Data Writing for B-Y Gain>

Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

11. * [CMD], [1], [2].
    * [ADR], [0], [1].
    * [SET].

<B-Y PHASE>
(Step12 to 14 are B-Y Phase Adjustment)

Push the following keys in order.

12. * [CMD], [0], [8].
    * [ADR], [9], [6].
13. * Push [INC] or [DEC] keys until the phase of red and yellow vectors are as close as possible to Spec. See Fig.C23.

<Data Writing for B-Y Phase>

Take care not to change the data while storing it into the EEPROM.
Push the following keys in order.

14. * [CMD], [1], [2].
    * [ADR], [1], [1].
    * [SET]
15. Repeat the Spep (3) to Step (14) until vectors are within Spec. as shown in Fig.C23.

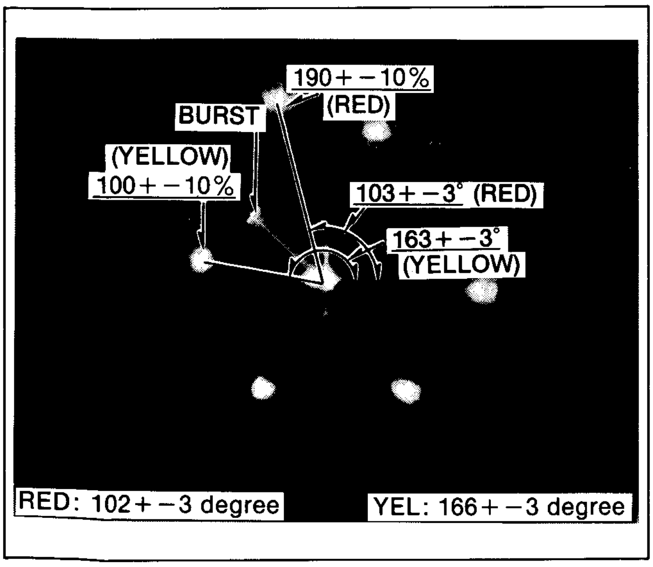


Fig.C23

16. DATA WRITING FOR COLOUR REPRODUCTION AND WHITE BALANCE

Purpose:
Each adjustment voltage is recorded in EEPROM as digital data. For colour reproduction adjustments such as white balance, phase and gain adjustments, the adjustments have only been performed for indoor lighting (3100 degree kelvin) and outdoor lighting (5600 degree kelvin). The EEPROM requires the data for other lighting conditions such as 3600 degree kelvin, 4500 degree kelvin and 6000 degree kelvin. In order to supply the rest of the data the following calculation has to be done and the results entered in the proper address of EEPROM.

Misentering:
White balance and colour reproduction in lighting conditions between indoor and outdoor are poor.

Note 1:
VFK0701ROM8 (New ROM) for EVR must be installed in EVR fixture.
Mode selector should be "A" side.

1. Push [SHIFT 2 + B] key simultaneously.
(All formulas in Fig.C25, are performed and results stored in EEPROM automatically)

Note 2:
How to calculate and enter the data manually.
You can do calculation and entering the data to EEPROM manually as follows;

(For example)
ITEM : R-Y GC 36

FORMULA : ADR05+1.000(ADR01−ADR05)

EEPROM ADDRESS : 03

1) Read Out the data.
ADR05 : Set the command to "04".
Set the address to "05".
Push the "SET" button.
The number which is indicated in "DATA" LED is a data of ADR05(Address "05") for example, if indicated data is "56", substitute "56" to ADR05. (This is hexadecimal number)
The same as above, read out the data from address "01".
For example if data which is read out is ADR01="6C", ADR05="56" above formula becomes;
R-Y GC 36 = 56+−1.000x(6C−56).
2) Convert the hexadecimal data into decimal number using conversion table. (Shown in Fig.C24) For example, "56" in hexadecimal is "86" in decimal from intersection of 5 and 6.
Substitute it into the formula.
Therefore,
R-Y GC 36 = 86+1.000x(108−86)
= 86+1.000x(22)
= 108
3) Convert the result "105" to hexadecimal using conversion table (Fig.C24).
"108" decimal is "6C" in hexadecimal.
Write the "6C" into EEPROM address "03".
* Set the command to [02].
* Set the address to [03].
* Set the data [6C].
* Push the [SET] key.

Hexadecimal lower digit Hexadecimal upper digic	0	1	2	3	4	5	6	7	8	9	A	b	② C	d	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
① 6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
b	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
d	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

For example: If indication of EVR is "6D" (as upper digit is "6" and lower digit is "D"), a decimal value of "109" is obtained from the intersection of ① and ② in the above table.

Fig. C24 Hexadecimal–Decimal Conversion Table

(Hexadecimal-Decimal Conversion Table)

For some of adjustment items, calculation of hexadecimal data (indicated on LED of EVR Fixture) is needed to obtain the adjustment data.

In these cases, convert the hexadecimal value to decimal value before calculation and after calculation is finished reconvert the result to hexadecimal to obtain the adjustment data. Write the new hexadecimal adjustment data into EEPROM.

A hexadecimal-decimal conversion table is shown in Fig. C24.

Caluculation for Colour Reproduction

NBR	ITEM	EEPROM ADDRESS	CMD	RESULT OF CALCULATION	FORMULA
(1)	R-Y GC 36	03 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"05" + 1.000 x (ADR"01" - ADR"05")
(2)	R-Y GC 45	02 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"05" + 0.702 x (ADR"01" - ADR"05")
(3)	R-Y GC 28	06 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"05" + 0.000 x (ADR"01" - ADR"05")
(4)	R-Y GC 60	00 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"05" + 1.000 x (ADR"01" - ADR"05")
(5)	R-Y GC 33	04 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"05" + 1.000 x (ADR"01" - ADR"05")
(6)	R-Y MAT 28	16 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"15" + 0.000 x (ADR"11" - ADR"15")
(7)	R-Y MAT 36	13 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"15" + 0.000 x (ADR"11" - ADR"15")
(8)	R-Y MAT 45	12 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"15" + 0.000 x (ADR"11" - ADR"15")
(9)	R-Y MAT 60	10 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"15" + 1.000 x (ADR"11" - ADR"15")
(10)	R-Y MAT 33	14 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"15"
(11)	B-Y GC 28	06 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"05" + 0.000 x (ADR"01" - ADR"05")
(12)	B-Y GC 36	03 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"05" + 0.449 x (ADR"01" - ADR"05")
(13)	B-Y GC 45	02 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"05" + 0.817 x (ADR"01" - ADR"05")
(14)	B-Y GC 60	00 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"05" + 1.000 x (ADR"01" - ADR"05")
(15)	B-Y GC 33	04 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"05" + 0.449 x (ADR"01" - ADR"05")
(16)	B-Y MAT 28	16 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"15" + 0.000 x (ADR"11" - ADR"15")
(17)	B-Y MAT 36	13 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"15" + 0.768 x (ADR"11" - ADR"15")
(18)	B-Y MAT 45	12 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"15" - 0.000 x (ADR"11" - ADR"15")
(19)	B-Y MAT 60	10 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"15" + 1.000 x (ADR"11" - ADR"15")
(20)	B-Y MAT 33	14 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"15" + 0.768 x (ADR"11" - ADR"15")
(21)	R-Y WB 28	26 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 0.606 x (ADR"21" - ADR"25")
(22)	R-Y WB 33	24 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.432 x (ADR"21" - ADR"25")
(23)	R-Y WB 36	23 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.432 x (ADR"21" - ADR"25")
(24)	R-Y WB 45	22 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.038 x (ADR"21" - ADR"25")
(25)	R-Y WB 49	29 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.000 x (ADR"21" - ADR"25")
(26)	R-Y-WB 60	20 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.233 x (ADR"21" - ADR"25")
(27)	R-Y WB LLIM	27 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.233 x (ADR"21" - ADR"25")
(28)	R-Y WB HLIM	28 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.000 x (ADR"21" - ADR"25")
(29)	B-Y WB 28	26 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" - 0.223 x (ADR"21" - ADR"25")
(30)	B-Y WB 33	24 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.287 x (ADR"21" - ADR"25")
(31)	B-Y WB 36	23 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.287 x (ADR"21" - ADR"25")
(32)	B-Y WB 45	22 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.565 x (ADR"21" - ADR"25")
(33)	B-Y WB 49	29 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 1.000 x (ADR"21" - ADR"25")
(34)	B-Y WB 60	20 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 1.699 x (ADR"21" - ADR"25")
(35)	B-Y WB LLIM	27 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 1.699 x (ADR"21" - ADR"25")
(36)	B-Y WB LLIM	28 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 1.000 x (ADR"21" - ADR"25")

Fig. C25-1

Caluculation for Auto Whitc Balancc

NBR	ITEM	EEPROM ADDRESS	CMD	RESULT OF CALCULATION	FORMULA
(1)	BH 28	46 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 - 0.847 x (ADR"21" - ADR"25")
(2)	BH 30	45 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 - 0.581 x (ADR"21" - ADR"25")
(3)	BH 36	43 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 - 0.288 x (ADR"21" - ADR"25")
(4)	BH 45	42 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 + 0.077 x (ADR"21" - ADR"25")
(5)	BH 51	41 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 + 0.765 x (ADR"21" - ADR"25")
(6)	BH 60	40 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 + 2.083 x (ADR"21" - ADR"25")
(7)	BH TR	48 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 + 0.077 x (ADR"21" - ADR"25")
(8)	BH SKY	47 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25 + 2.102 x (ADR"21" - ADR"25")
(9)	BL 28	36 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.082 x (ADR"21" - ADR"25")
(10)	BL 30	35 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.256 x (ADR"21" - ADR"25")
(11)	BL 36	33 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.558 x (ADR"21" - ADR"25")
(12)	BL 45	32 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.765 x (ADR"21" - ADR"25")
(13)	BL 51	31 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 2.083 x (ADR"21" - ADR"25")
(14)	BL 60	30 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 2.102 x (ADR"21" - ADR"25")
(15)	BL TR	38 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"25" + 0.765 x (ADR"21" - ADR"25")
(16)	BL SK	37 (HIGH DIGIT)	READ : 14 WRITE: 12		ADR"00"
(17)	RH 28	46 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 1.401 x (ADR"21" - ADR"25")
(18)	RH 30	45 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 0.528 x (ADR"21" - ADR"25")
(19)	RH 36	43 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.178 x (ADR"21" - ADR"25")
(20)	RH 45	42 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(21)	RH 51	41 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(22)	RH 60	40 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(23)	RH TR	48 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.142 x (ADR"21" - ADR"25")
(24)	RH SK	47 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(25)	Rxisth	4A (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(26)	RL 28	36 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 0.528 x (ADR"21" - ADR"25")
(27)	RL 30	35 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.178 x (ADR"21" - ADR"25")
(28)	RL 36	33 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 0.624 x (ADR"21" - ADR"25")
(29)	RL 45	32 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.142 x (ADR"21" - ADR"25")
(30)	RL 51	31 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.533 x (ADR"21" - ADR"25")
(31)	RL 60	30 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" + 1.533 x (ADR"21" - ADR"25")
(32)	RL TR	38 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 2.000 x (ADR"21" - ADR"25")
(33)	RL SK	37 (LOW DIGIT)	READ : 04 WRITE: 02		ADR"25" - 2.000 x (ADR"21" - ADR"25")

Fig. C25-2

17. ADDITIONAL USES FOR THE E.V.R.

E.V.R. FIXTURE

Camera Process section uses a memory IC called a E.E.P.R.O.M.(Electrical Erasable Programmable Read Only Memory) that replaces the variable resistor in conventional camera process. In the conventional camera process, each adjustment point was adjusted by turning variable resistors as shown in Fig.C26. In the Movie Camera adjustment voltage is recorded in the EEPROM as 8 bit digital data. The EEPROM supplies the recorded adjustment voltage to the adjustment point as shown in Fig.C27.

The data in the EEPROM can be easly changed electrically. The E.V.R.(Electric Variable Resistor) has been designed to change the 8 bit data of EEPROM in process circuit. The E.V.R. can also communicate directly with the RAM of the micro processor to change each control voltage. In normal operation the EEPROM would send the voltage data to RAM where the digital data is used to changed the adjustment values in the various circuits. Using the E.V.R. you can change the data stored in the EEPROM easily there by adjusting the camera process section. And the E.V.R. can also send the data to the RAM directly to confirm the adjustment.

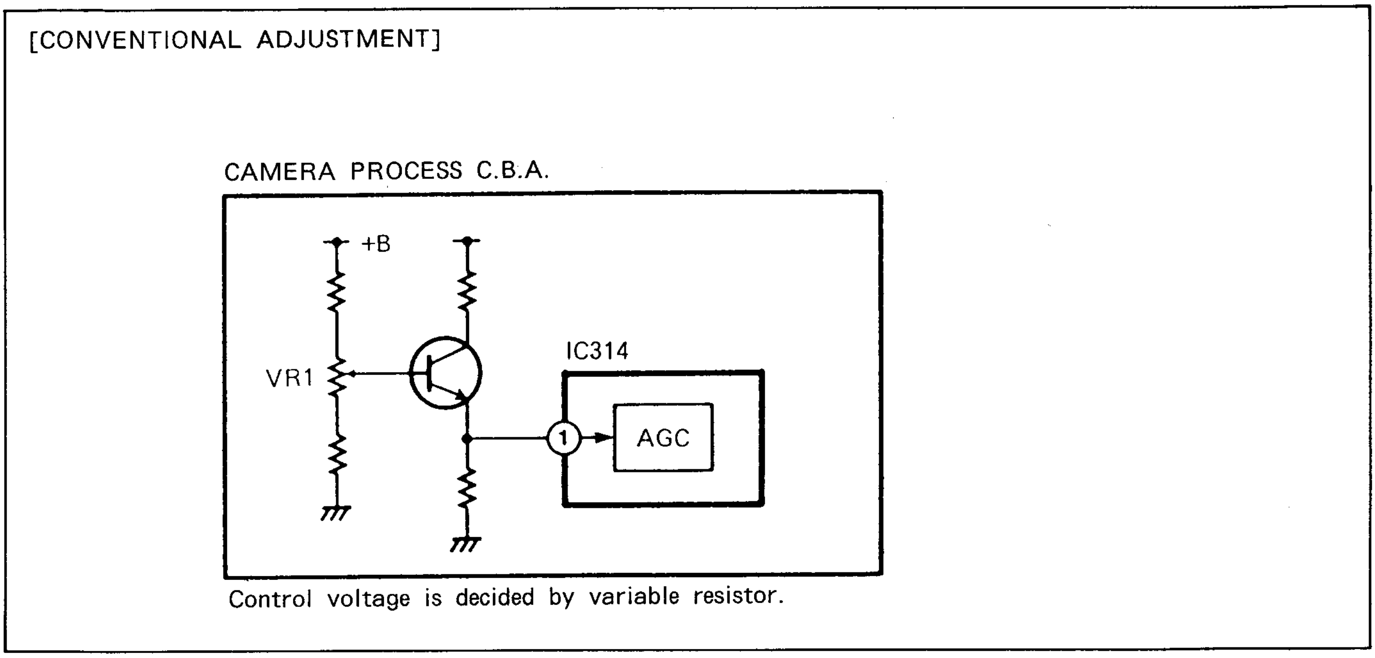

[CONVENTIONAL ADJUSTMENT]
CAMERA PROCESS C.B.A.
+B
VR1
IC314
1
AGC
Control voltage is decided by variable resistor.

Fig. C26

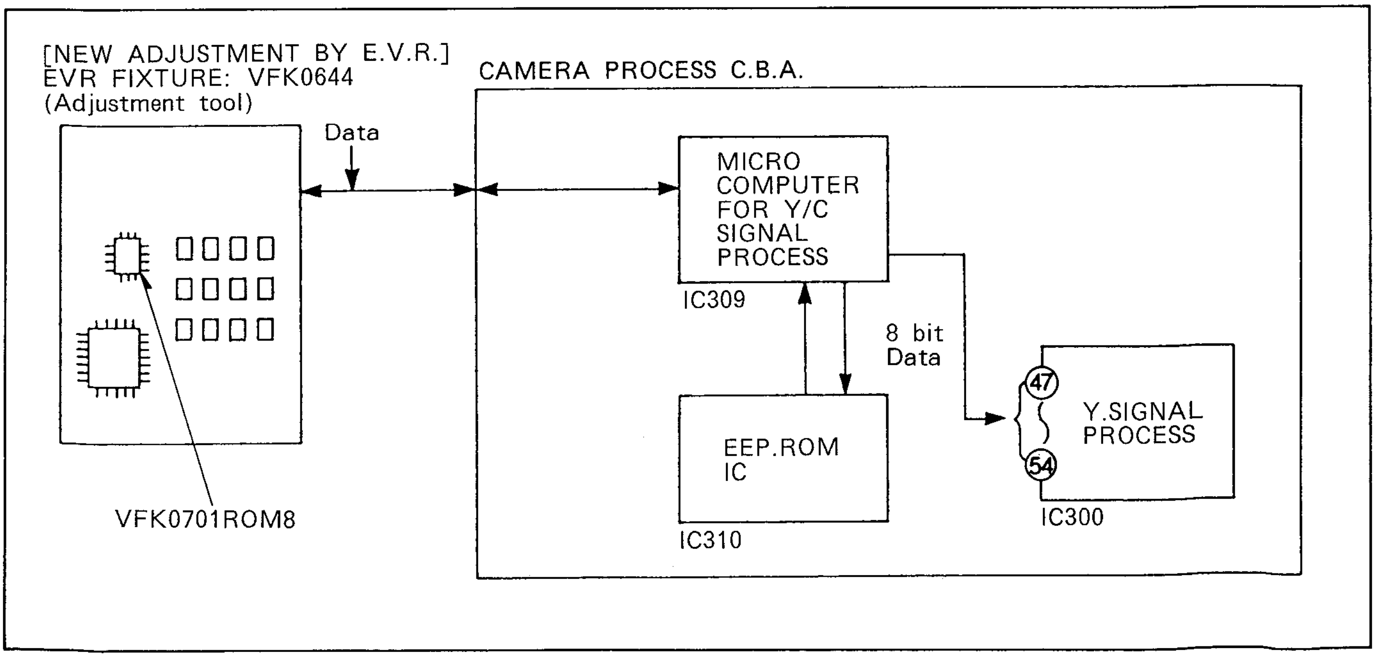
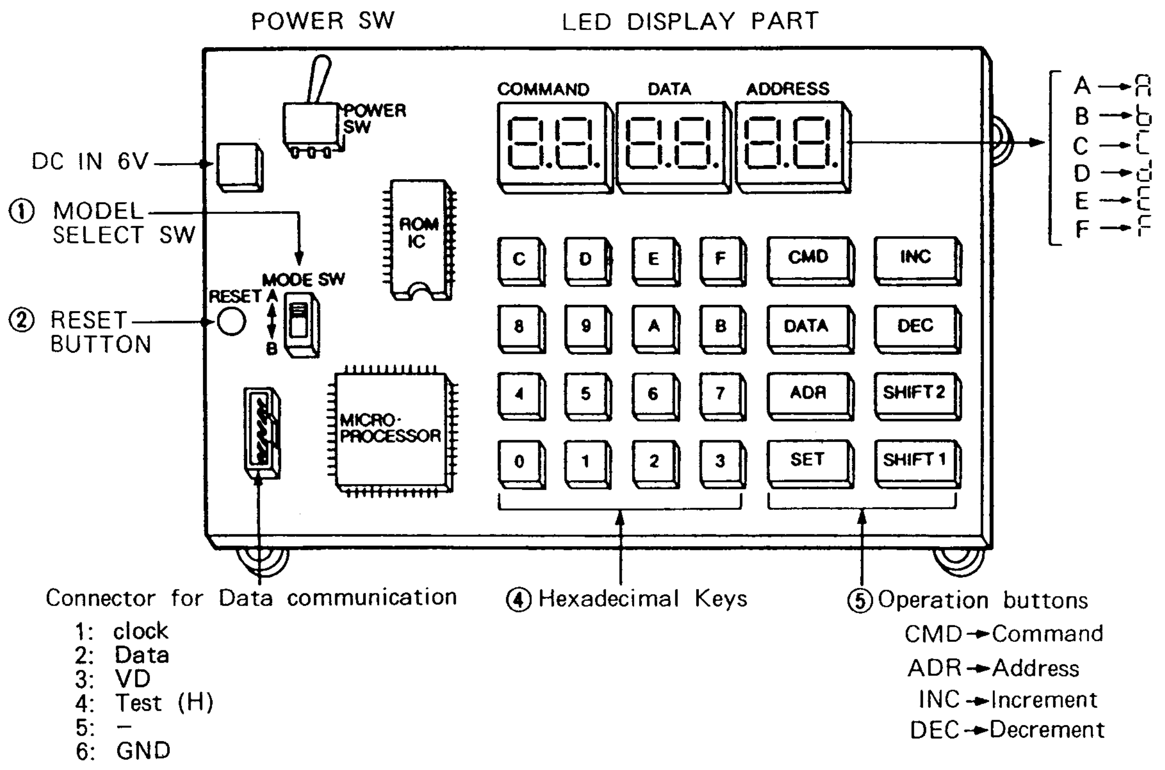

[NEW ADJUSTMENT BY E.V.R.]
EVR FIXTURE: VFK0644
(Adjustment tool)
Data
VFK0701ROM8
CAMERA PROCESS C.B.A.
MICRO COMPUTER FOR Y/C SIGNAL PROCESS
IC309
8 bit Data
EEP.ROM IC
IC310
47
54
Y.SIGNAL PROCESS
IC300

Fig. C27

Name of key


POWER SW
LED DISPLAY PART
POWER SW
COMMAND
DATA
ADDRESS
A →
B →
C →
D →
E →
F →
DC IN 6V
① MODEL SELECT SW
MODE SW
RESET A
B
② RESET BUTTON
ROM IC
MICRO-PROCESSOR
C
D
E
F
CMD
INC
8
9
A
B
DATA
DEC
4
5
6
7
ADR
SHIFT 2
0
1
2
3
SET
SHIFT 1
Connector for Data communication
1: clock
2: Data
3: VD
4: Test (H)
5: –
6: GND
④ Hexadecimal Keys
⑤ Operation buttons
CMD → Command
ADR → Address
INC → Increment
DEC → Decrement

NO.	NAME	DESCRIPTION
①	MODE SW	MODEL selection switch. In case of NV-S6/S600, turn it to A side
②	RESET BUTTON	After Power is on, if operation is not stable, push this SW.
③	ROM IC	ROM IC of which Programing (to operate E.V.R) is memorized in. In the future, to cope with new camcorder servicing, this ROM IC could be replaced to new version.
④	HEXADECIMAL KEYS	Key buttons of 16 pieces (from "O" to "F"). These are used when "COMMAND", "DATA" or "ADDRESS" is set.
⑤	OPERATION BUTTONS	The buttons to operate writing, reading or setting the data.
	CMD: Command button	This is used to decide the which mode (command) between E.V.R and camcorder (for example, data writing or reading) to perform.
	DATA: Data button	For changing Data.
	ADR: Address button	To appoint the EEPROM address or RAM address.
	SET: Set button	To perform the appointed command (for example reading or writing).
	INC: Incliment DEC: Decliment	Increase or decrease the data one by one (+1, −1)
	SHIFT 1 button	To carry out macro operation (while pushing with hexadecimal keys) SHIFT 1 button is used. (Macro operations will be described later)
	SHIFT 2 button	To carry out macro operation(while pushing with hexadecimal keys) SHIFT 2 button is used (Macro operations will be described later.)

Fig. C28

(Before Adjusting How to use the E.V.R. Fixture)

1) How to read out the data which is being stored in EEPROM.
Connect the E.V.R. Fixture as shown in Fig.C5.

Result:
Adjustment value of AGC has been set for "6A". It is advisable to read out the data like this and make a note of it before writing the new data so that if a error should occur you can rewrite original data.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, Reading out the data of AGC Adjustment comunication from camcorder to E.V.R. EEPROM→ E.V.R.	1	Set the Command mode to "14", "14" is read out command. (Refer to command description)	[CMD] [1] [4]	LED lights up 14/80 00 Command setting
	2	Set the Address of EEPROM	[ADR] [6] [A]	14 80 6A. Address setting of EEPROM LED lights up
	3	Read out the data	[SET] Push this for 2 seconds	14 09.6A data for AGC for example LED lights up

Fig. C29

2) Writing the New Data.

(1) Search and Write Procedure
(For example : AGC Adjustment).

Confirmation:
Confirm whether data is written correctly or not.

Procedure:
1. Set the Command to [04].
2. Set the Address to [41].
3. Push the [SET] button.
4. The number which is indicated on DATA LED is a data which has been written.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, writing the AGC adjustment data. E.V.R.→ EEPROM	1	Set the command to "18".	[CMD] [1] [8]	Command for search mode.
	2	Set the Address of RAM to "BC" E.V.R.→ RAM (communication from E.V.R. to RAM)	[ADR] [B] [C]	LED lights up. 18/80 6C
	3	Adjustment Push "DEC" or "INC" button so that AGC at B302-20 becomes 240	Search with [INC] or [DEC]	18 9 16C. LED lights up
	4	Change the command to "12"	[CMD] [1] [2]	LED lights up 12/9 16C Command for Direct Writing

Fig. C30

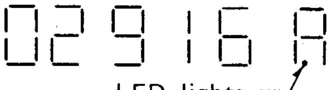
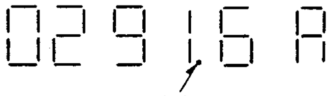
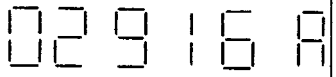
Item	Proceduring Order		Buttons to be Pushed	LED Indication
	5	Set the address of EEPROM to "6A"	ADR 4 F	address of EEPROM  LED lights up
	6	Do not change the data after adjustment	DATA 9 1	 LED lights up
	7	Write the data	SET Push this for 2sec.	LED disappear 

Fig. C31

3) Direct Writing Procedure

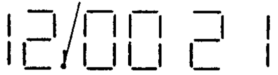
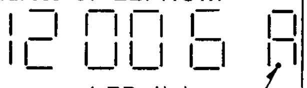
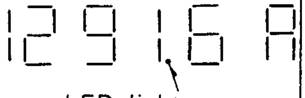
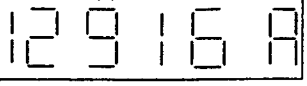
Item	Proceduring Order		Buttons to be Pushed	LED Indication
For Example, writing the AGC adjustment data	1 2 3	**Searching the best Point.** **same as (1)**	same as (2)	same as (2)
	4	Change the command to "01"	CMD 1 2	LED lights up  Command for Direct writing
	5	Set the address of EEPROM to "6A"	ADR 6 A	address of EEPROM  LED lights up
	6	Set the data of best point "91"	DATA 9 1	 LED lights up
	7	**Write the data**	SET Push this for 2sec.	LED disappear. 

Fig. C32

(Adjustment Items required after replacing the individual components.)

When following parts are replaced, check the following adjustment items and adjust if necessary.

NO.	Replaced Parts	Adjustment point or check points which are required			
		ALL ADJ. Points	Colour Reproduction	Focus & Zoom Encoder	Other ADJ.
1	IC312(EEPROM)	○			
2	CCD Unit Individual		○	○	
3	Process C.B.A	○			
4	Sensor AF C.B.A	△	○	○	
5	Lens Unit			○	Hole Amp
6	Focus Encoder C.B.A			○	
7	IC204				CDS Gain
8	IC702				Hole Amp
9	other				

Fig. C33

○ mark ....Adjustment may be required.
△ mark ....Confirm adjustment necessity and adjust it, if necessary.
Colour Reproduction ....WB, Colour gain, colour phase adjustments.

2-5-2. ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

The following adjustment are for Electric Viewfinder.

(1) Connect the Viewfinder plug to the E.V.F. connector on the unit.
(2) The camera circuit must be completely aligned before viewfinder adjustments are made.

1. CENTERING ADJUSTMENT

(1) Aim the camera at the registration chart.
(2) Adjust the deflection Yoke centering magnets (DY801) turning them so that the picture on monitor TV is centered.

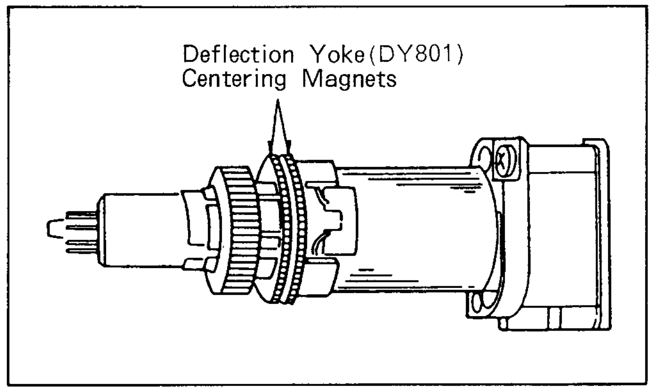

Deflection Yoke(DY801)
Centering Magnets

Fig. E1

2. FOCUS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR803	NO	BALL CHART
M. EQ.		SPEC.	
VIEWFINDER		BEST RESOLUTION	

NOTE VR803: E.V.F. C.B.A.
1) Aim the camera unit at the Ball chart.
2) Adjust the VR803 for best resolution in viewfinder.

3. V.SIZE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR801	NO	GRAY SCALE CHART
M. EQ.		SPEC.	
VIEWFINDER		VERTICAL SIZE IS FIXED	

NOTE:
VR801 : E.V.F. C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Adjust the vertical size(VR801) so that the Vertical size is correct and the picture does not roll as shown in Fig.E2.

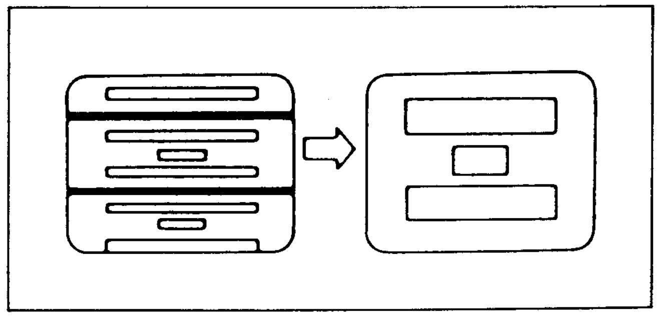


Fig. E2

4. BRIGHTNESS ADJUSTMENT

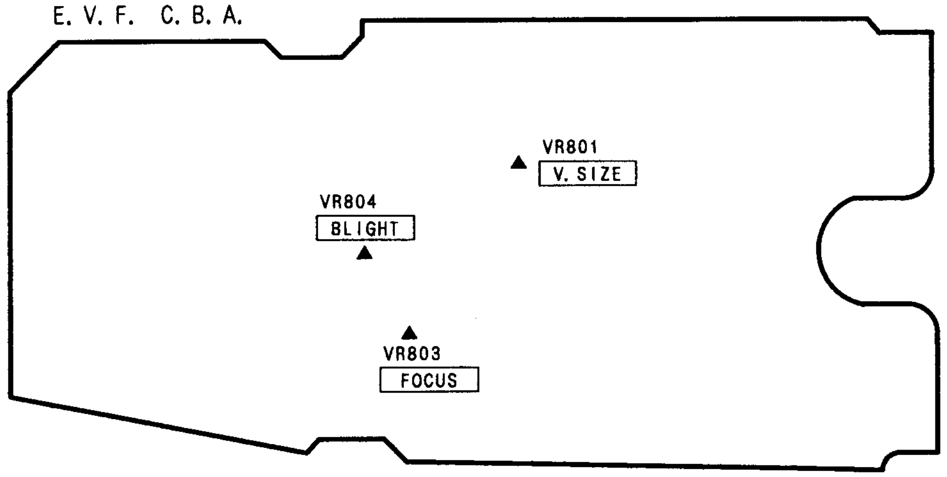
TP	ADJ.	LENS CAP	CHART
	VR804	NO	GRAY SCALE CHART
M. EQ.		SPEC.	
VIEWFINDER		NATURAL GRADATION	

NOTE:
VR804 : E.V.F. C.B.A.

(1) Aim the camera at gray scale chart.
(2) Adjust the brightness control(VR804) so that the black and white bars in the E.V.F. screen are the same as they are in the monitor TV screen.

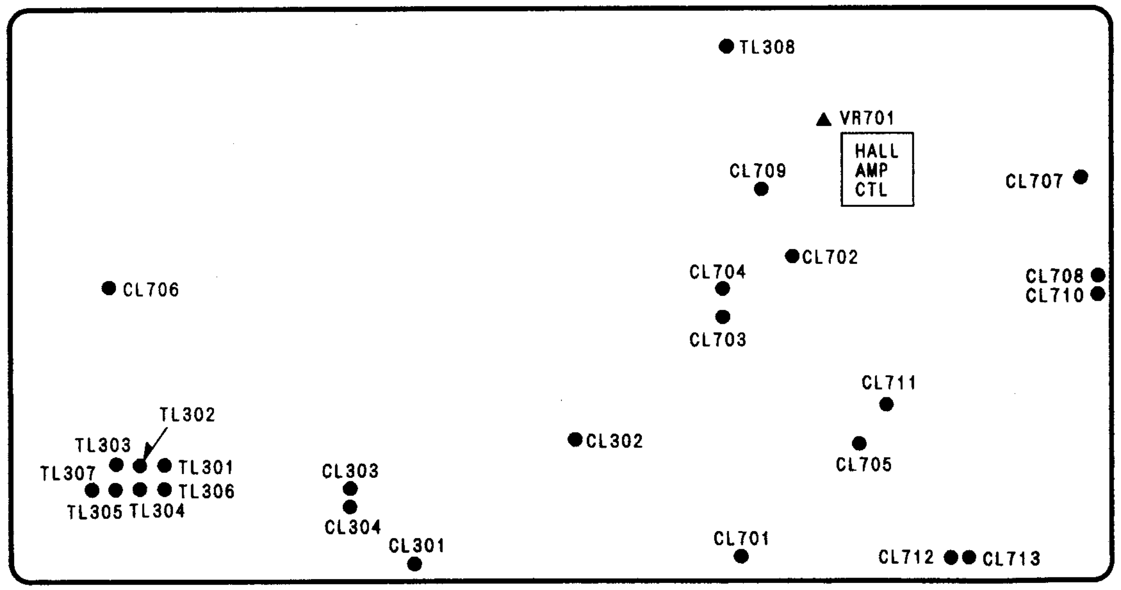
LOCATION OF TEST POINTS & CONTROLS (1)

E. V. F. C. B. A.


VR801
V. SIZE
VR804
BLIGHT
VR803
FOCUS

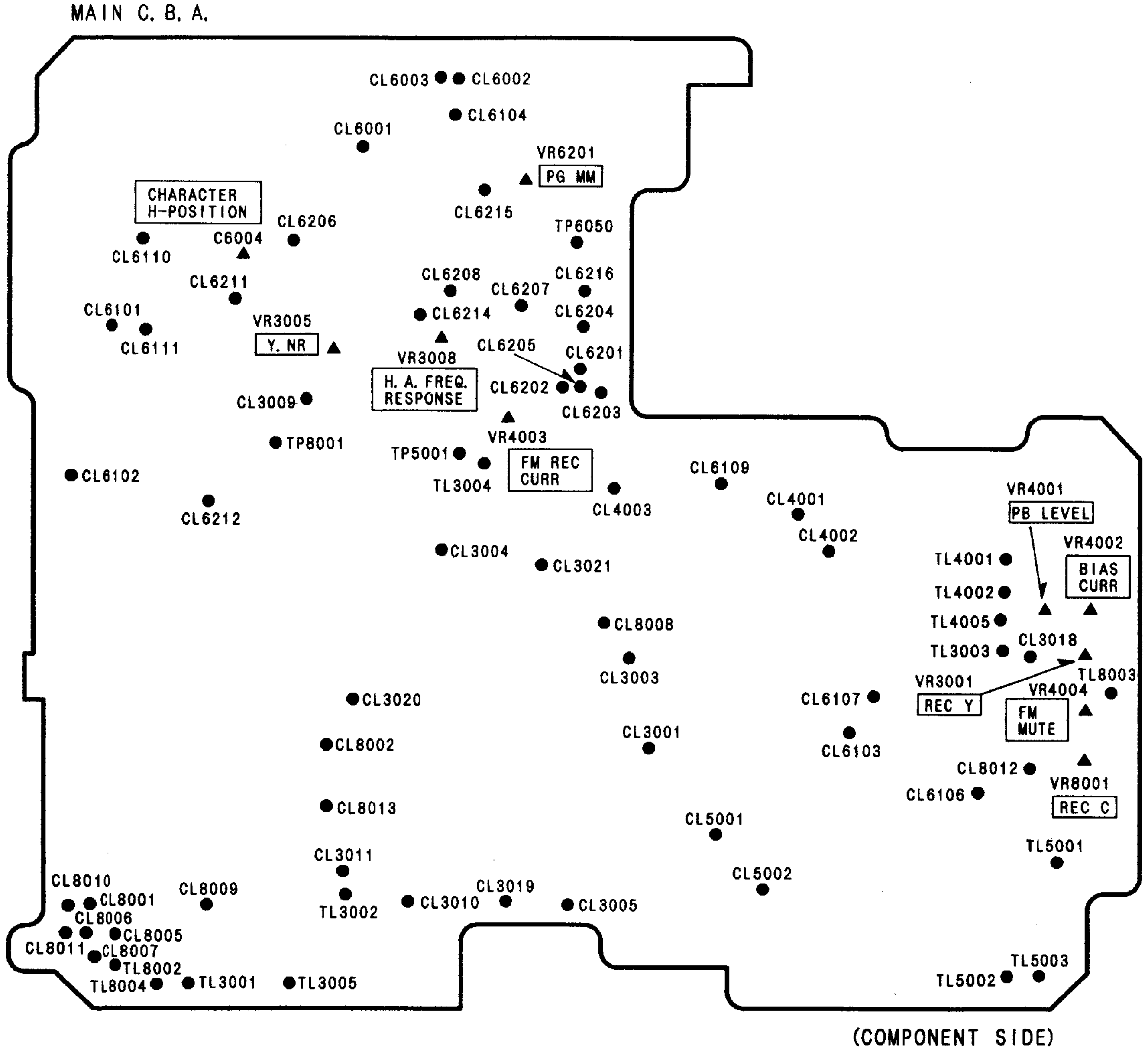
(FOIL SIDE)

PROCESS & AUTO FOCUS C. B. A.


TL308
VR701
HALL AMP CTL
CL709
CL707
CL702
CL704
CL706
CL708
CL710
CL703
CL711
TL302
TL303
CL302
TL307
TL301
CL303
CL705
TL306
TL305
TL304
CL304
CL301
CL701
CL712
CL713

(COMPONENT SIDE)

LOCATION OF TEST POINTS & CONTROLS (2)


MAIN C. B. A.
CL6003
CL6002
CL6104
CL6001
VR6201
PG MM
CL6215
TP6050
CHARACTER H-POSITION
CL6206
C6004
CL6110
CL6211
CL6208
CL6207
CL6216
CL6214
CL6204
CL6101
CL6111
VR3005
Y. NR
VR3008
CL6205
CL6201
H. A. FREQ. RESPONSE
CL6202
CL6203
CL3009
TP8001
VR4003
TP5001
FM REC CURR
TL3004
CL6109
CL6102
CL6212
CL4003
CL4001
VR4001
PB LEVEL
CL4002
VR4002
BIAS CURR
CL3004
CL3021
TL4001
TL4002
TL4005
CL8008
TL3003
CL3018
TL8003
CL3003
VR3001
VR4004
REC Y
FM MUTE
CL3020
CL6107
CL3001
CL8002
CL6103
CL8012
VR8001
CL6106
REC C
CL8013
CL5001
TL5001
CL3011
CL5002
CL8010
CL8001
CL8009
CL3019
CL8006
TL3002
CL3010
CL3005
CL8005
CL8011
CL8007
TL8002
TL5003
TL8004
TL3001
TL3005
TL5002
(COMPONENT SIDE)

2-5-3. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

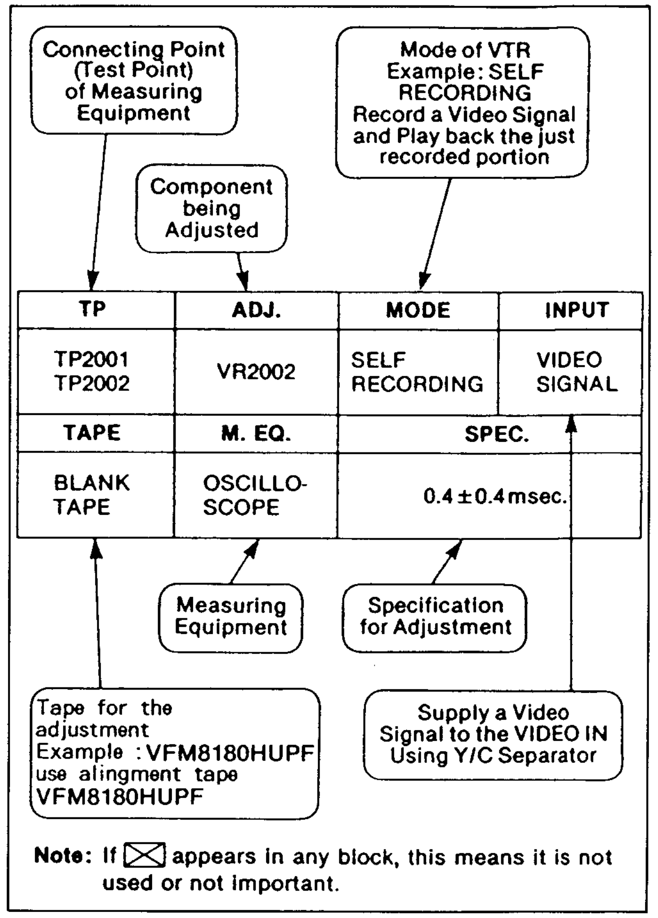
The following equipment is required for adjustment of the VTR section of VHS-C-Movie.

1. VTVM (Vacuum Tube Volt Meter)
   DVM (Digital Volt Meter)
   Voltage Range: 0.01~50V
2. Dual Trace Oscilloscope
   Voltage Range: 0.06~50V/div
   Frequency Range: 0~50MHz
   Probe: 10:1 or 1:1
3. Frequency counter
   Frequency Range: 0~10MHz
4. Signal Generator (Sinewave)
   Frequency Range: 0~10MHz
5. Video Sweep Generator
   Frequency Range: 0~10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS-C-Movie.-C Alignment Tape (VFMS0002H6C)
9. V HS-C-Movie.-C Blank Tape
10. Pattern Generator
11. Vectorscope
12. DC Power Supply

PREPARATION

1. Remove the casing panels.
   (Refer to the disassembly method)
2. Connect the extension cable is necessary.
   VFK0668 (MAIN (B4001) to HI-FI (B4501))
   VFK0686 (MAIN (B6002) to OPERATION (P6302))
   VFK0670 (MAIN (FP6001) to CAMERA OPERATION)
   VFK0723 (MAIN (B6201) to DRIVE (B2001))
   VFK0727 (MAIN (FP6004) to CHASSIS)
   VFK0728 (MAIN (FP4002) to AC HEAD)
   VFK0729 (MAIN (FP6005) to CHASSIS)
   VFK0752 (MAIN (B6006) to POWER (B6501))

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Component being Adjusted
Mode of VTR Example: SELF RECORDING Record a Video Signal and Play back the just recorded portion
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example : VFM8180HUPF use alingment tape VFM8180HUPF
Supply a Video Signal to the VIDEO IN Using Y/C Separator

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

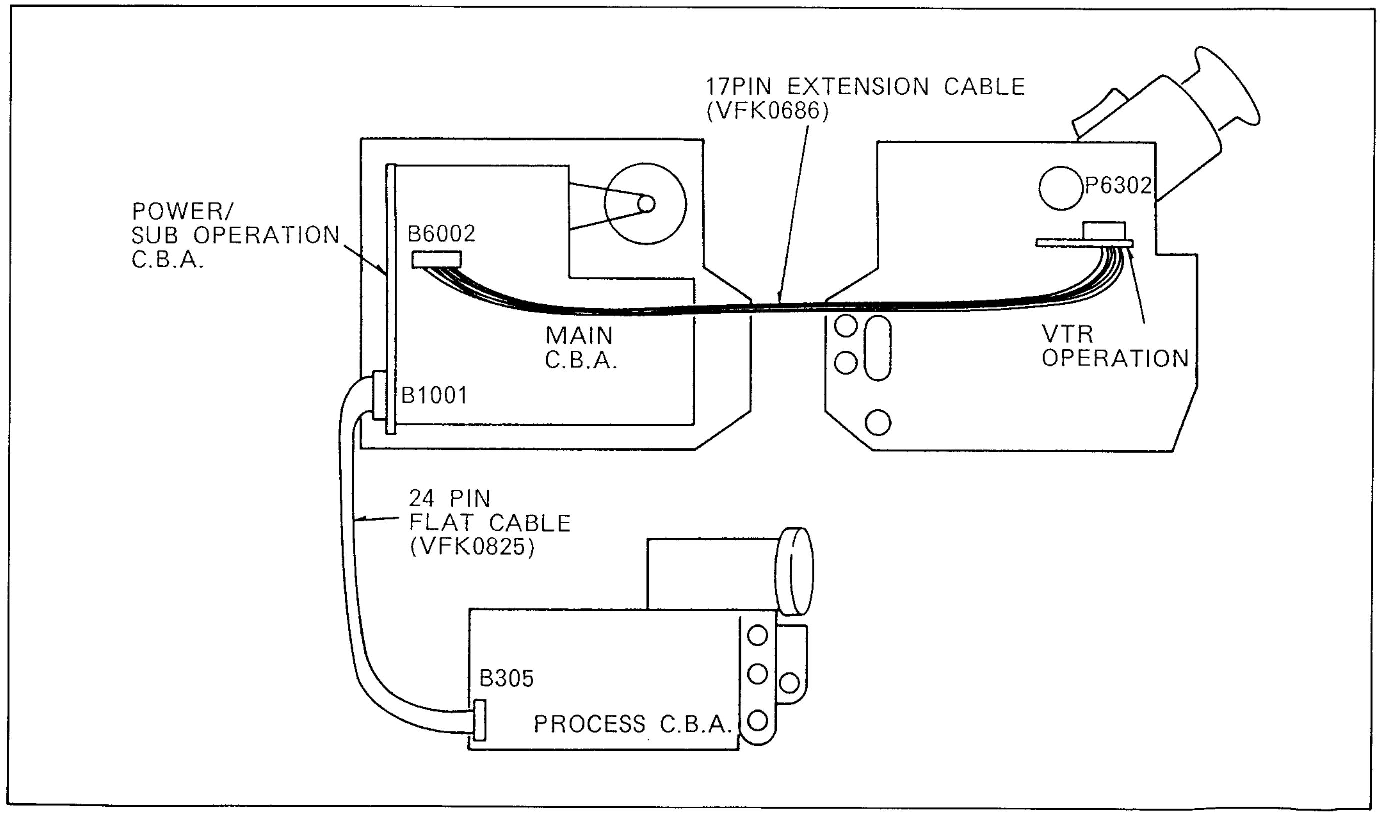

17PIN EXTENSION CABLE (VFK0686)
POWER/ SUB OPERATION C.B.A.
B6002
P6302
MAIN C.B.A.
VTR OPERATION
B1001
24 PIN FLAT CABLE (VFK0825)
B305
PROCESS C.B.A.

Fig. V1

SERVO SECTION

1. PG SHIFTER ADJUSTMENT

Purpose:
Determine the Head Switching point during play–back.

Symptom of Misadjustment:
May cause Head Switching Noise and/or Vertical jitter in the picture.

TP	ADJ.	MODE	INPUT
B6007-6 VIDEO OUT	VR6201	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE (VFM8180HUPF)	OSCILLO-SCOPE	6.5H±0.5H	

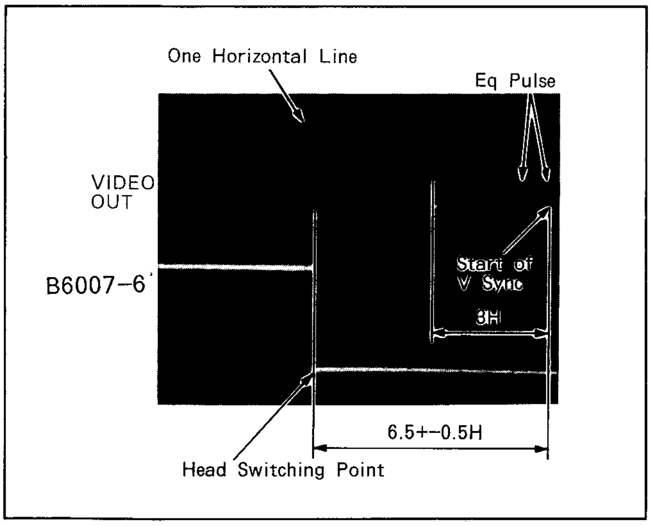


Fig. V2

LUMINANCE & CHROMINANCE SECTION

2. RECORDING CURRENT ADJUSTMENT REC CHROMA LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL5001 (HOT) TL5002 (GND)	VR8001	REC/PLAY (SP)	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	12+–2mVp-p	

Purpose:
Set the optimum Record Chroma Level.

Symptom of Misadjustment:
If the record chroma level is too high, beats may be seen in the picture.
If the record chroma level is too low, weak the colour in the picture.

1. Cut off the incoming light to lens unit.
(When using the E.V.R., push [SHIFT 2 + 0] keys simultaneously.)
2. Make recording in SP mode.
3. Connect the jumper wire between TL3003 and TL8002(5V) to eliminate the Luminance signal.
4. Adjust the VR8001 until chroma level is 12+–2mVp–p.

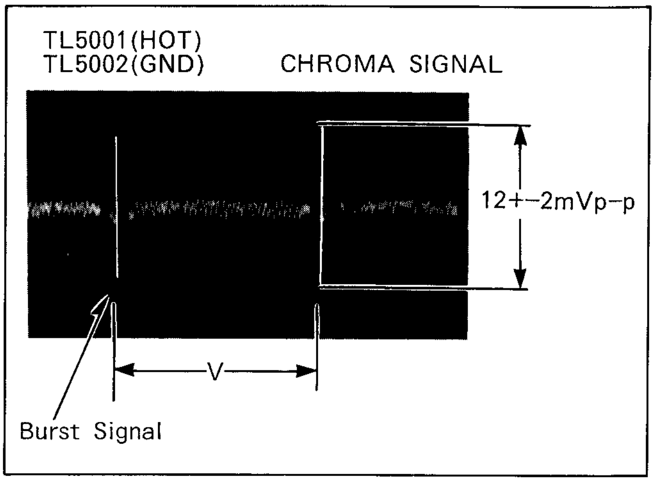


Fig. V3

NOTE:
(When turning off the FADE, push [SHIFT 2 + 1] keys simultaneously on the E.V.R.)

3. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL5001 (HOT) TL5002 (GND)	VR3001	REC/PLAY (SP)	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	92+–4mVp-p	

Purpose:
Set the optimum Recording Luminance Level.

Symptom of Misadjustment:
If the Record Luminance Level is too high, Video may overload.
If the Level is too Low, the S/N Ratio deteriorates.

1. Cut off the incoming light to lens unit.
(When using the E.V.R., push the [SHIFT 2 + 0] keys simultaneously.)
2. Connect the oscilloscope to TL5001(HOT) and TL5002(GND).
3. Make recording with SP mode.
4. Adjust the VR3001 so that luminance level becomes 92+–4mVp–p.

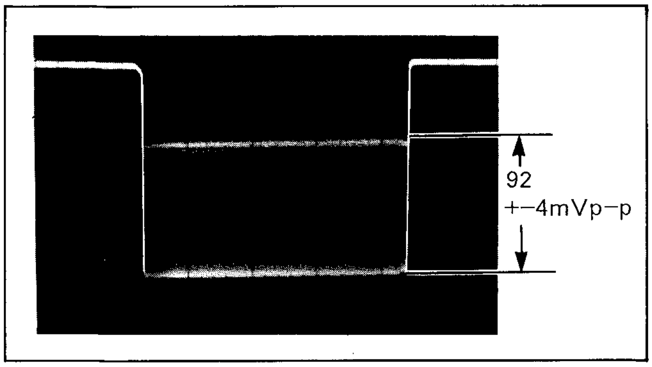


Fig. V4

NOTE:
(When turning off the FADE, push [SHIFT 2 + 1] keys simultaneously on the E.V.R.)

4. YNR ADJUSTMENT

TP	ADJ.	MODE	CHART
TP3003	VR3005	PLAY	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE VFM8180HUPF	OSCILLO-SCOPE	SIGNAL IS MINIMIZED (LESS THAN 100mV)	

Purpose:
Improve the overall S/N Ratio especially in the Low Frequency component.

Symptom of Misadjustment:
The S/N Ratio will be lower.

1. PlayBack the Alignment tape.
2. Connect the Video output to oscilloscope.
3. Adjust VR3005 so that signal is minimized.

5. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

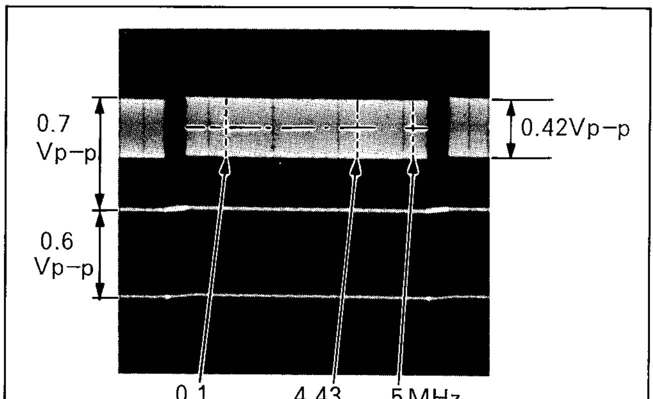
TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3008	SELF RECORDING (SP)	VIDEO SWEEP SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VIDEO SWEEP/ OSCILLO-SCOPE	A=0dB+−1dB (89~112%)	

Purpose:
To improve Video Frequency Response Level.

Symptom of Misadjustment:
Video Frequency Response will be deteriorated.
Picture will be noisy.

Note:
Edit switch must be off.

1. Connect a jumper wire between B6007−7 and B6007−11.
2. Set the sweep generator output as shown below.



CONDITIONS : 1. BURST SIGNAL OFF
2. 75ohm TERMINATED

Fig. V5

3. Supply sweep signal to B6007−10.
4. Record it for a while.
4. Playback just recorded portion.
5. Adjust VR3008 until level at 2MHz is within spec. as shown below.

A=0+−1dB (89−112%)

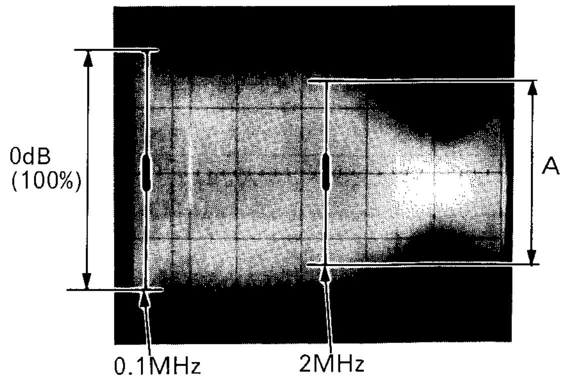


Fig.V6

AUDIO SECTION

6. AUDIO BAIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL4001 (HOT) TL4002 (GND)	VR4002	REC	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	V.T.V.M.	2.7 mVrms ± 0.1 mVrms	

7. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT	VR4001	VHS SELF RECORDING	1 kHz AUDIO −50 dB Signal/ VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERATOR/ V.T.V.M.	−8 dB ± 0.5 dB	

Note:

Audio select SW must be normal

1. **Supply the audio signal (1 KHz/−50 dB sine-wave) to audio circuit through the MIC Input Jack.**
2. **Set the audio select SW to Normal position.**
3. **Adjust VR4001 so that the level is EE Level −8 dB ± 0.5 dB.**

Hi-Fi AUDIO SECTION

8. Hi−Fi AUDIO RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL5003 (HOT) TL5001 (GND)	VR4003	VHS RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
VFM8180HUPF	OSCILLO-SCOPE	240 + −5 mVp-p	

1. Connect the OSCILLOSCOPE to TL5003(HOT) and TL5001(GND).
2. Adjust VR4003 so that the Audio recording current is 240+−5mVp−p as shown below.

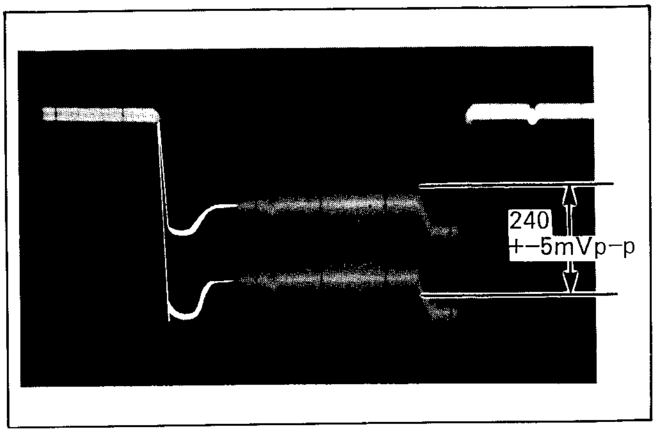


Fig. V7

9. AUDIO MUTING ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP5001	VR4004	SELF RECORDING	1 kHz, −10 dB AUDIO SIG.
TAPE	**M. EQ.**	**SPEC.**	
VFM8180HUPF	SIGNAL GENERATOR/ OSCILLO-SCOPE	DC LEVEL = 2V	

Note1

Before this adjustment, Tape interchangeability Adjustment must be completed.

1. Play back the Alignment tape.
2. Push the tracking Button so that signal level at TP5001 becomes 18∼20mVp−p.
3. Adjust VR4004 so that Sound mode change to Normal from Hi−Fi mode.

SYSTEM CONTROL SECTION

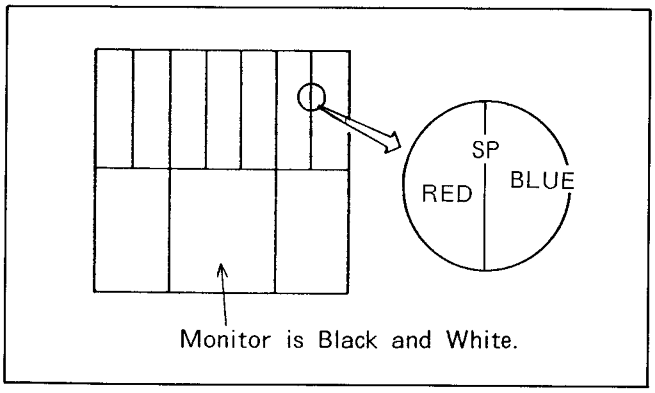
10. CHARACTER POSITION ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR TV	C6004	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	MONITOR TV		

Purpose:
Optimum the character position.

Symptom of Mis–adjustment:
Character position is changed from centre.

1. Connect the jumper wire between B6007–5 and B6007–7
2. Supply the colour bar signal to B6007–10.
3. Adjust the C6004 so that the character position is shown below.



Monitor is Black and White.

Fig. V8

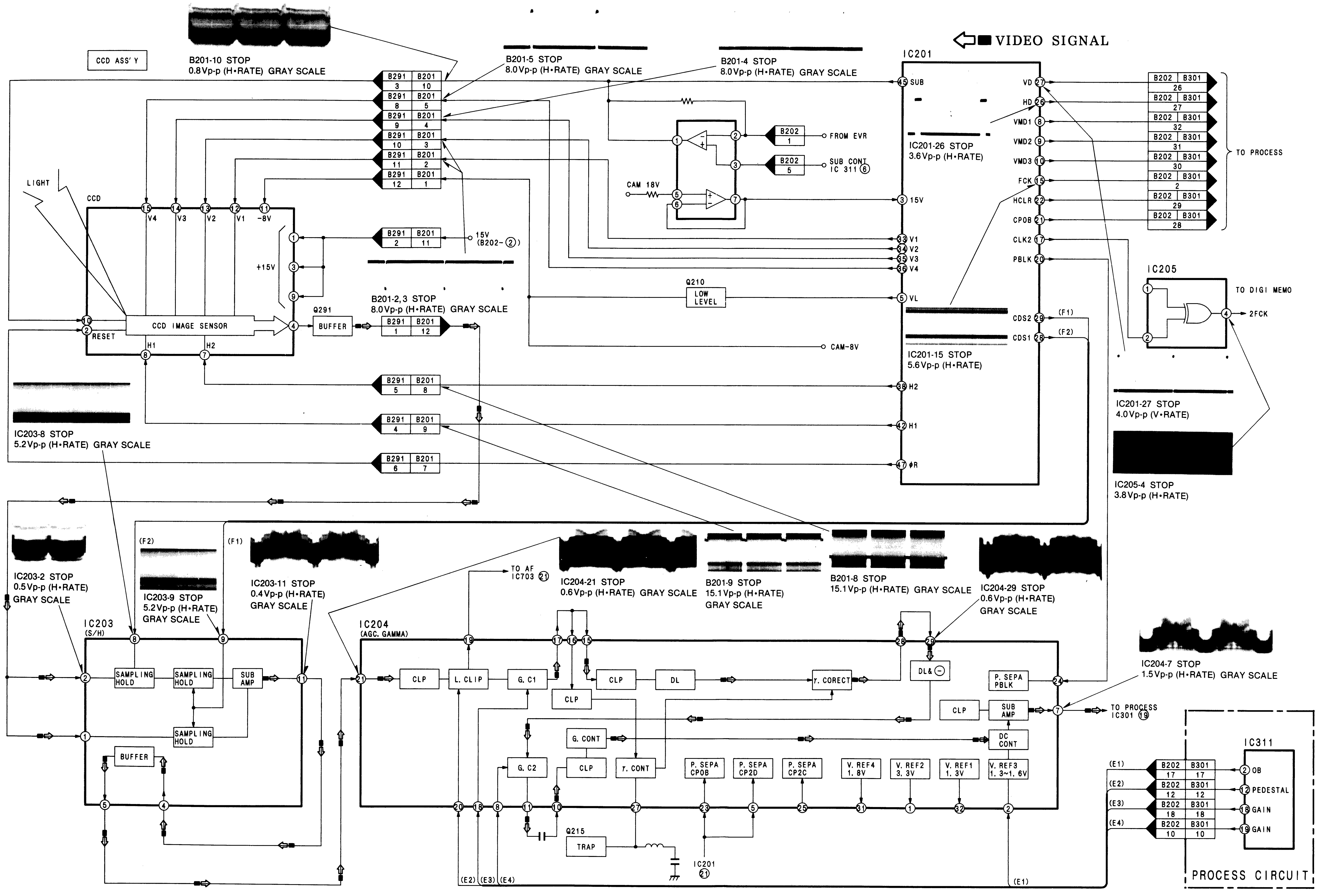
SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. ABBREVIATIONS

INITIAL/LOGO		ABBREVIATION
A	A·DUB	AUDIO DUBBING
	A·ORP	AUDIO OVERLAP PULSE
	A·TR	AUTO TRACKING
	AD REC	AUDIO DELAYD REC
	AF CS	AF CHIP SELECT
	AFADE	AUDIO FADE
	ALC CONT	ALC CONTROL
	ALC MAIN	ALC DRIVE
	ART·V	ARTIFICIAL VERTICAL SYNC SIGNAL
B	BF	BURST FLAG PULSE
	BLK	BLANKING
	BM	BALANCED MODULATOR
	B-Y KB	B-Y CARRIER BALANCE
	BUF or BF	BUFFER
C	CAPVM	CAPSTAN MOTOR CURRENT
	CCW	COUNTER CLOCK WISE
	CDS	CCD OUTPUT SIGINAL
	CFM 1 ~4	CHROMA FIELD MEMORY
	CGC	CHROMA GAIN CONTROL
	CHR MIX	CHARACTER MIX
	CLK or CL	CLOCK
	CMEM	CHROMA MEMORY SIGNAL
	CMO	CHROMA MEMORY OUTPUT
	CP	CLAMP PULSE
	CPOB	OB CLAMP PULSE
	CS	CHIP SELECT
	CW	CLOCK WISE
	CYLVM	CYLINDER MOTOR CURRENT
D	DL	DELAY LINE
	DS1	DOUBLE SAMPLING PULSE 1
	DS2	DOUBLE SAMPLING PULSE 2
	DSP	DIGITAL SIGNAL PROCESS
E	ECM	ELECTRIC CONDENSER MIC
	EE CS	EEPROM CHIP SELECT
	EECS	EEPROM CHIP SELECT
	ENV·DET	ENVELOPE LEVEL DETECT
	EZOOM	ELECTRIC ZOOM
F	F·ENC	FOCUS ENCODER
	FM MUTE	FM AUDIO MUTE
	FMD REC	FM AUDIO DELAY REC
	FMOEM	FIELD MEMORY ENABLE
	FNO	F VALUE
H	H·CLR	HIGH CLEAR
	HBR·SET	HIGH BRIGHT SET
	HLT	HIGHT BRIGHT SIGNAL
	HD	HORIZONTAL DRIVE PULSE
I	IOU	R-Y ANALOGUE SIGNAL OUTPUT
	IOV	B-Y ANALOGUE SIGNAL OUTPUT
	IRQ	INTERRUPT REQUEST
L	LD	LOAD PULSE
	LED CONT	LED CONTROL
	LI BATT	LITHIUM BATTERY
	LSB	LEAST SIGINIFICANT BIT
M	MD	MODULATOR
	MF·F	MANUAL FOCUS FAR
	MF·N	MANUAL FOCUS NEAR
	MSB	MOST SIGNIFICANT BIT
N	N·DE	NON LINER DE-EMPHASIS
	N·LE	NON LINER EMPHSIS

INITIAL/LOGO		ABBREVIATION
N	NRD	NON REC DATA
	NRE	READ ENABLE INPUT(LOW ACTIVE)
	NWE	WRITE ENABLE INPUT(LOW ACTIVE)
O	OE	OUTPUT ENABLE
	OP2	OPERATINAL AMP OUTPUT 2
	OSD	ON SCREEN DISPLAY
P	PCBM(B-Y)	B-Y CARRIER BALANCE
	PCBM(R-Y)	R-Y CARRIER BALANCE
	PEDE CONT	PEDESTAL CONTROL
	POR	POWER ON RESET
	PREBLK	PRE BLANKING
	PWM	PULSE WIDTH MODULATOR
	R/B	READY/BUSY
	R-Y KB	R-Y CARRIER BALANCE
	RAD	READ ADDRESS DATA
	RAE	READ ADDRESS ENABLE
	RE	READ ENANLE
	RERASE	ROTARY ERASE HEAD
	RSTR	RESET READ
	RSTW	RESET WRITE
S	SBD	SERIAL DATA
	SBO	SERIAL OUTPUT
T	TL	TORQUE LIMIT
	TRFIX	TRACKING FIX
U	UVSEL	U/V SELCT
V	VCO	VOLTAGE CONTROL OSCILLTOR
	VCTL	Φ VOLTAGE CHARGE CONTROL
	VD	VERTICAL DRIVE PULSE
	VDREC	VIDEO DELAYED REC
	VMD	VELOCITY MODE DATA
	VORP	VIDEO OVERLAP
	VRO	REFEREMCE VOLTAGE OUTPUT
W	WADE	WRITE ADDRESS ENABLE
	WE	WRITE ENABLE
Y	YNC	NOISE CANCELER (LUMINANCE)
	YNR	NOISE REDUCTION(LUMINANCE)
Z	Z·ENC	ZOOM ENCODER

3-2. SENSOR BLOCK DIAGRAM

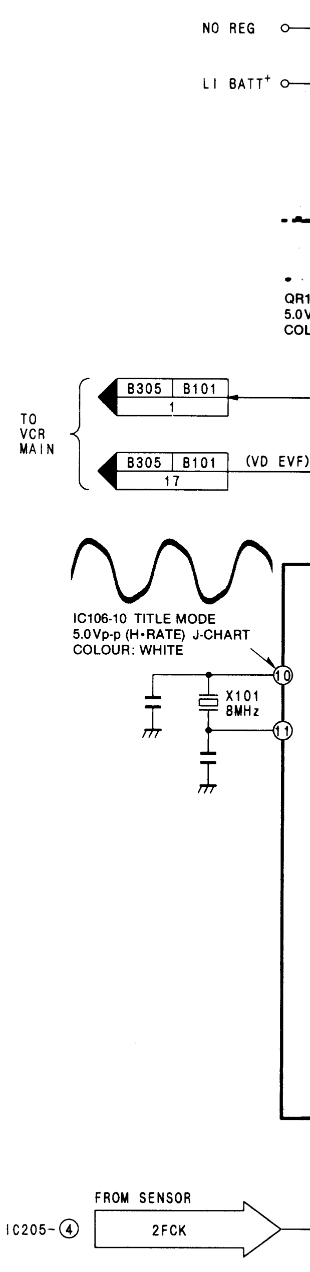


VIDEO SIGNAL
CCD ASS'Y
B201-10 STOP
0.8Vp-p (H•RATE) GRAY SCALE
B201-5 STOP
8.0Vp-p (H•RATE) GRAY SCALE
B201-4 STOP
8.0Vp-p (H•RATE) GRAY SCALE
IC201
LIGHT
CCD
V4
V3
V2
V1
-8V
+15V
CCD IMAGE SENSOR
RESET
H1
H2
15V (B202-②)
FROM EVR
SUB CONT IC 311 ⑥
CAM 18V
B201-2,3 STOP
8.0Vp-p (H•RATE) GRAY SCALE
Q291
BUFFER
Q210
LOW LEVEL
CAM-8V
SUB
VD
HD
VMD1
VMD2
VMD3
FCK
HCLR
CPOB
CLK2
PBLK
CDS2
CDS1
15V
V1
V2
V3
V4
VL
H2
H1
ϕR
IC201-26 STOP
3.6Vp-p (H•RATE)
IC201-15 STOP
5.6Vp-p (H•RATE)
IC201-27 STOP
4.0Vp-p (V•RATE)
IC205-4 STOP
3.8Vp-p (H•RATE)
TO PROCESS
IC205
TO DIGI MEMO
2FCK
(F1)
(F2)
IC203-8 STOP
5.2Vp-p (H•RATE) GRAY SCALE
IC203-2 STOP
0.5Vp-p (H•RATE)
GRAY SCALE
IC203-9 STOP
5.2Vp-p (H•RATE)
GRAY SCALE
IC203-11 STOP
0.4Vp-p (H•RATE)
GRAY SCALE
IC204-21 STOP
0.6Vp-p (H•RATE) GRAY SCALE
B201-9 STOP
15.1Vp-p (H•RATE)
GRAY SCALE
B201-8 STOP
15.1Vp-p (H•RATE) GRAY SCALE
IC204-29 STOP
0.6Vp-p (H•RATE)
GRAY SCALE
IC204-7 STOP
1.5Vp-p (H•RATE) GRAY SCALE
TO AF IC703 ㉑
IC203 (S/H)
SAMPLING HOLD
SUB AMP
BUFFER
IC204 (AGC, GAMMA)
CLP
L. CLIP
G. C1
DL
γ. CORECT
DL&⊖
P. SEPA PBLK
SUB AMP
DC CONT
G. CONT
G. C2
γ. CONT
P. SEPA CPOB
P. SEPA CP2D
P. SEPA CP2C
V. REF4 1. 8V
V. REF2 3. 3V
V. REF1 1. 3V
V. REF3 1. 3~1. 6V
Q215
TRAP
IC201 ㉑
TO PROCESS IC301 ⑲
(E1)
(E2)
(E3)
(E4)
IC311
OB
PEDESTAL
GAIN
GAIN
PROCESS CIRCUIT

B291	B201
3	10
8	5
9	4
10	3
11	2
12	1
2	11
1	12
5	8
4	9
6	7

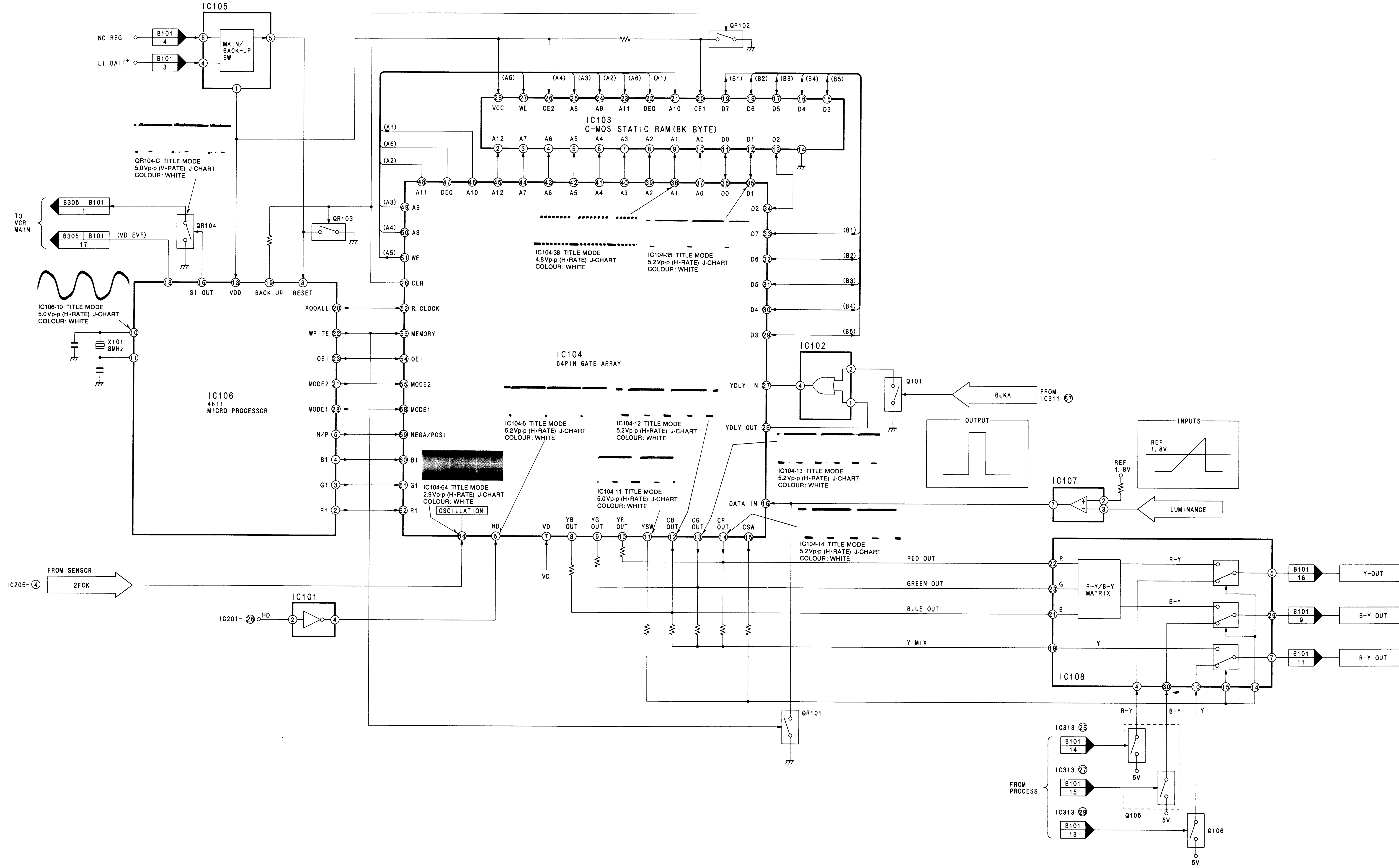
B202	B301
26	26
27	27
32	32
31	31
30	30
2	2
29	29
28	28
17	17
12	12
18	18
10	10

3-3. DIGITAL M

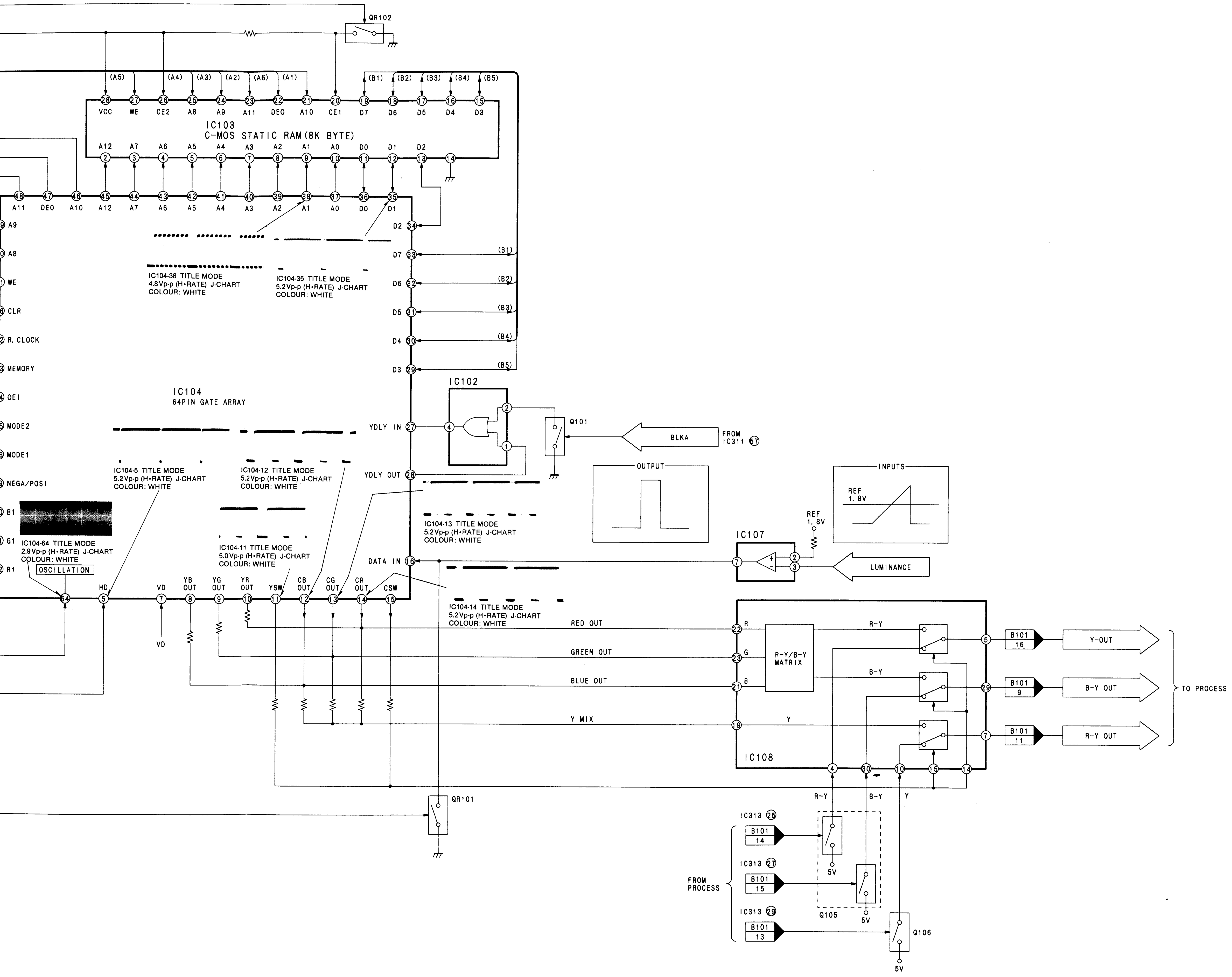


NO REG
LI BATT⁺
QR1
5.0V
COL
TO VCR MAIN
B305 B101 1
B305 B101 17
(VD EVF)
IC106-10 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE
X101 8MHz
FROM SENSOR
IC205-④
2FCK

3-3. DIGITAL MEMORY BLOCK DIAGRAM

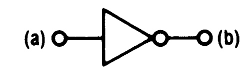


IC105
NO REG
LI BATT+
B101 4
B101 3
MAIN/ BACK-UP SW
QR102
IC103
C-MOS STATIC RAM (8K BYTE)
VCC
WE
CE2
A8
A9
A11
DEO
A10
CE1
D7
D6
D5
D4
D3
A12
A7
A6
A5
A4
A3
A2
A1
A0
D0
D1
D2
(A5)
(A4)
(A3)
(A2)
(A6)
(A1)
(B1)
(B2)
(B3)
(B4)
(B5)
QR104-C TITLE MODE
5.0Vp-p (V•RATE) J-CHART
COLOUR: WHITE
TO VCR MAIN
B305
B101
1
17
(VD EVF)
QR104
QR103
IC104-38 TITLE MODE
4.8Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-35 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
A9
A8
WE
CLR
R. CLOCK
MEMORY
OEI
MODE2
MODE1
NEGA/POSI
B1
G1
R1
SI OUT
VDD
BACK UP
RESET
ROOALL
WRITE
OEI
MODE2
MODE1
N/P
B1
G1
R1
IC106-10 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE
X101
8MHz
IC106
4bit
MICRO PROCESSOR
IC104
64PIN GATE ARRAY
IC102
Q101
BLKA
FROM IC311 ㊼
YDLY IN
YDLY OUT
OUTPUT
INPUTS
REF 1.8V
REF 1.8V
IC107
LUMINANCE
DATA IN
IC104-5 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-12 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-13 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-64 TITLE MODE
2.9Vp-p (H•RATE) J-CHART
COLOUR: WHITE
OSCILLATION
IC104-11 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-14 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
HD
VD
YB OUT
YG OUT
YR OUT
YSW
CB OUT
CG OUT
CR OUT
CSW
FROM SENSOR
IC205-④
2FCK
IC101
IC201-㉖
HD
VD
RED OUT
GREEN OUT
BLUE OUT
Y MIX
R
G
B
R-Y/B-Y MATRIX
R-Y
B-Y
Y
IC108
B101 16
Y-OUT
B101 9
B-Y OUT
B101 11
R-Y OUT
QR101
R-Y
B-Y
Y
IC313 ㉕
B101 14
IC313 ㉗
B101 15
IC313 ㉙
B101 13
FROM PROCESS
5V
Q105
5V
Q106
5V


QR102
(A5) (A4) (A3) (A2) (A6) (A1)
(B1) (B2) (B3) (B4) (B5)
VCC WE CE2 A8 A9 A11 DEO A10 CE1 D7 D6 D5 D4 D3
IC103
C-MOS STATIC RAM (8K BYTE)
A12 A7 A6 A5 A4 A3 A2 A1 A0 D0 D1 D2
A11 DEO A10 A12 A7 A6 A5 A4 A3 A2 A1 A0 D0 D1
A9
A8
WE
CLR
R. CLOCK
MEMORY
OEI
MODE2
MODE1
NEGA/POSI
B1
G1
R1
D2 D7 D6 D5 D4 D3
IC104-38 TITLE MODE
4.8Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-35 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104
64PIN GATE ARRAY
YDLY IN
YDLY OUT
DATA IN
IC104-5 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-12 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-64 TITLE MODE
2.9Vp-p (H•RATE) J-CHART
COLOUR: WHITE
OSCILLATION
IC104-11 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-13 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
IC104-14 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE
HD VD YB OUT YG OUT YR OUT YSW CB OUT CG OUT CR OUT CSW
VD
IC102
Q101
BLKA
FROM IC311 57
OUTPUT
INPUTS
REF 1.8V
REF 1.8V
IC107
LUMINANCE
RED OUT
GREEN OUT
BLUE OUT
Y MIX
R G B
R-Y/B-Y MATRIX
R-Y
B-Y
Y
IC108
B101 16
B101 9
B101 11
Y-OUT
B-Y OUT
R-Y OUT
TO PROCESS
QR101
R-Y B-Y Y
IC313 25
B101 14
IC313 27
B101 15
IC313 29
B101 13
FROM PROCESS
5V
Q105
5V
Q106
5V

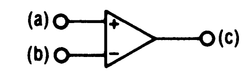
SYMBOL	TRUTH VALUE TABLE

INVERTER



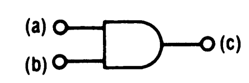
IN	(a)	H	L
OUT	(b)	L	H

COMPARTOR



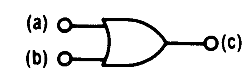
IN	(a) (b)	(a) > (b)	(a) < (b)
OUT	(c)	H	L

AND CIRCUIT



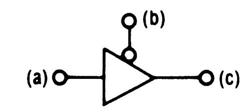
IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	L	L	H

OR CIRCUIT



IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	H	H	H

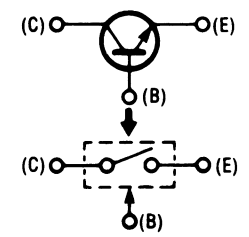
THREE STATES BUFFER



IN	(a)	H	L	H or L
	(b)	L	L	H
OUT	(c)	H	L	※

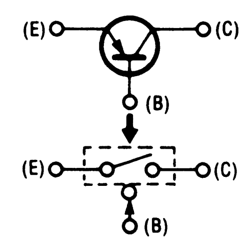
※ High Impedance

TR. SW (NPN TYPE)



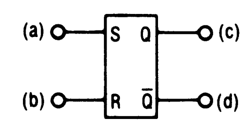
BASE	H	L
TR. SW	ON	OFF

TR. SW (PNP TYPE)



BASE	H	L
TR. SW	OFF	ON

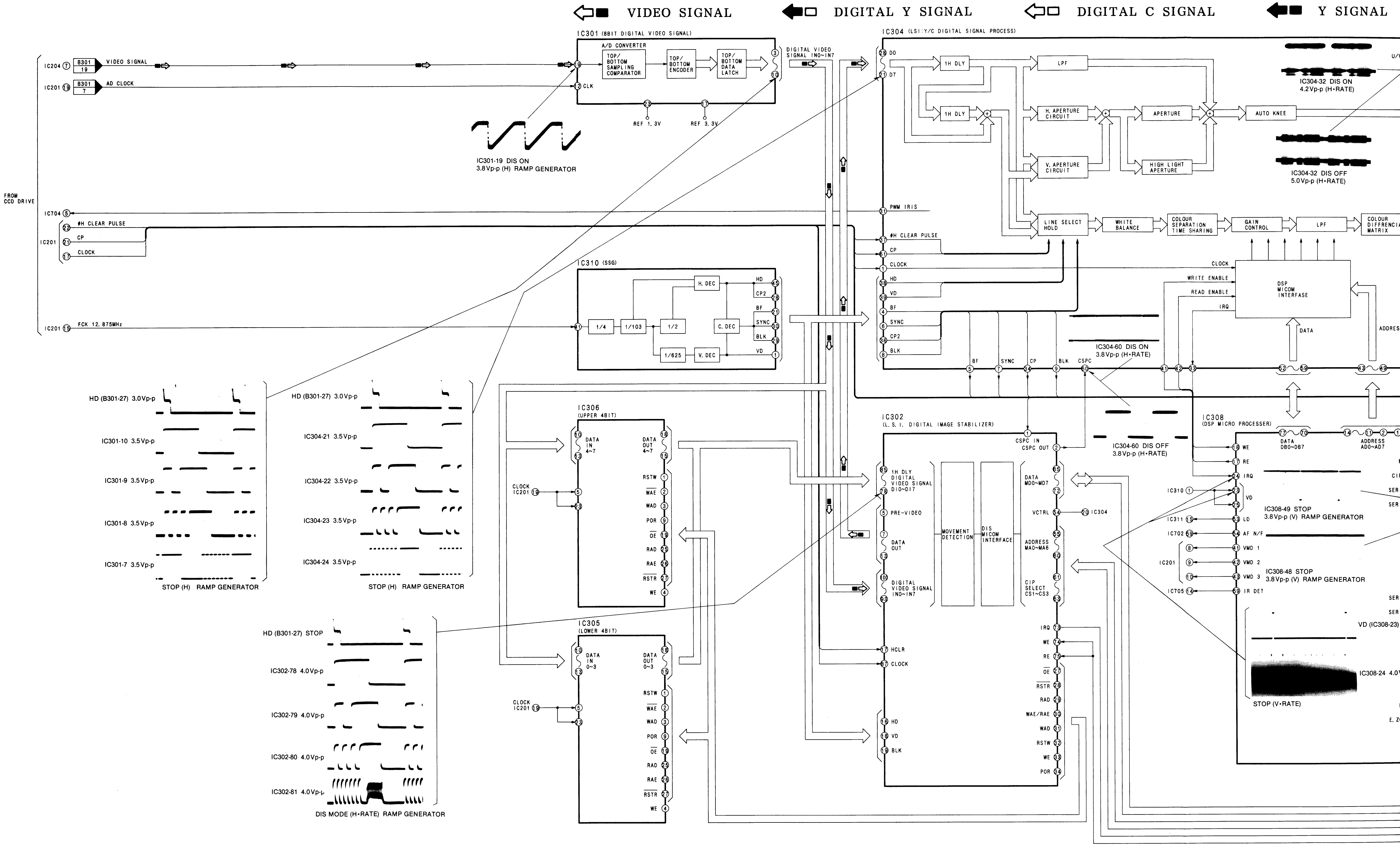
R-S TYPE FLIP-FLOP



IN	(a)	L	L	⎍
	(b)	L	⎍	L
OUT	(c)	※	L	H
	(d)	◆	H	L

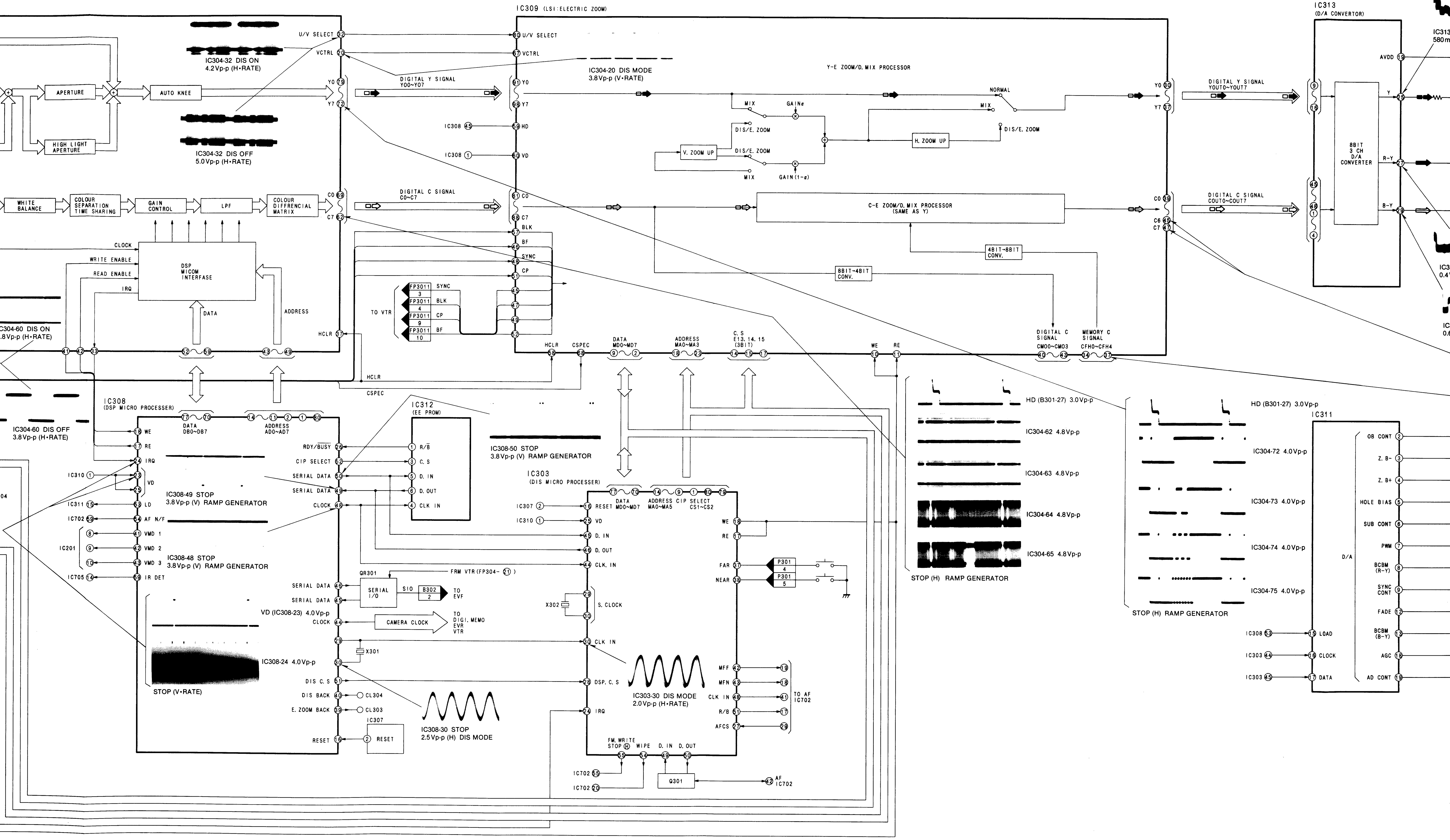
※ Initial condition is maintained.
◆ Initial condition is reversed.

3-4. PROCESS BLOCK DIAGRAM

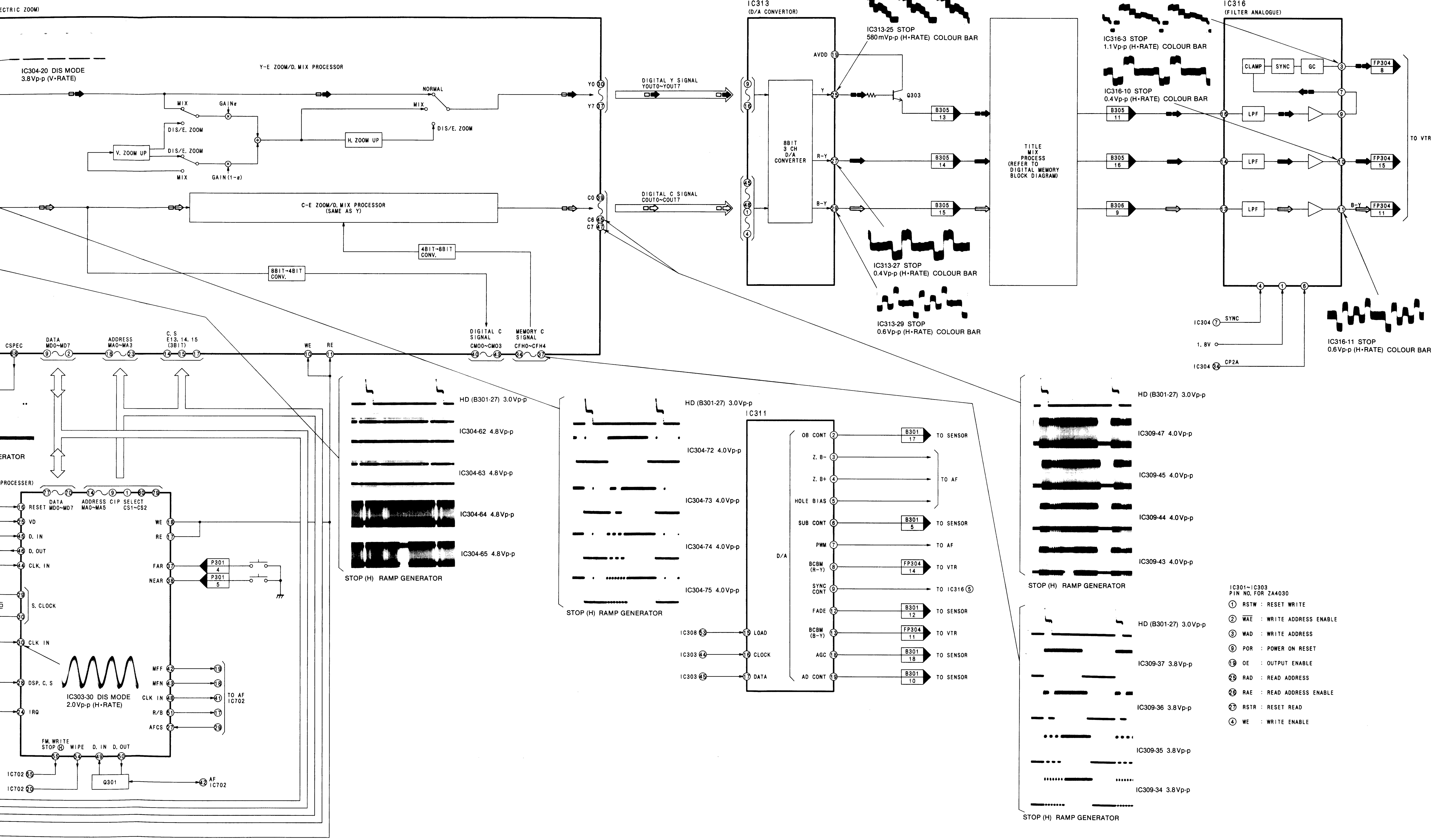

VIDEO SIGNAL
DIGITAL Y SIGNAL
DIGITAL C SIGNAL
Y SIGNAL
FROM CCD DRIVE
IC204 ⑦ B301 19 VIDEO SIGNAL
IC201 ⑲ B301 7 AD CLOCK
IC704 ⑤
IC201 ㉒ ϕH CLEAR PULSE
㉑ CP
⑰ CLOCK
IC201 ⑮ FCK 12.875MHz
IC301 (8BIT DIGITAL VIDEO SIGNAL)
A/D CONVERTER
TOP/BOTTOM SAMPLING COMPARATOR
TOP/BOTTOM ENCODER
TOP/BOTTOM DATA LATCH
CLK
REF 1.3V
REF 3.3V
IC301-19 DIS ON 3.8Vp-p (H) RAMP GENERATOR
DIGITAL VIDEO SIGNAL IN0~IN7
IC310 (SSG)
1/4
1/103
1/2
1/625
H. DEC
V. DEC
C. DEC
HD
CP2
BF
SYNC
BLK
VD
HD (B301-27) 3.0Vp-p
IC301-10 3.5Vp-p
IC301-9 3.5Vp-p
IC301-8 3.5Vp-p
IC301-7 3.5Vp-p
STOP (H) RAMP GENERATOR
HD (B301-27) 3.0Vp-p
IC304-21 3.5Vp-p
IC304-22 3.5Vp-p
IC304-23 3.5Vp-p
IC304-24 3.5Vp-p
STOP (H) RAMP GENERATOR
HD (B301-27) STOP
IC302-78 4.0Vp-p
IC302-79 4.0Vp-p
IC302-80 4.0Vp-p
IC302-81 4.0Vp-p
DIS MODE (H•RATE) RAMP GENERATOR
IC306 (UPPER 4BIT)
DATA IN 4~7
DATA OUT 4~7
CLOCK IC201 ⑲
RSTW
WAE
WAD
POR
OE
RAD
RAE
RSTR
WE
IC305 (LOWER 4BIT)
DATA IN 0~3
DATA OUT 0~3
CLOCK IC201 ⑲
IC304 (LSI:Y/C DIGITAL SIGNAL PROCESS)
D0
D7
1H DLY
1H DLY
LPF
H. APERTURE CIRCUIT
V. APERTURE CIRCUIT
APERTURE
HIGH LIGHT APERTURE
AUTO KNEE
IC304-32 DIS ON 4.2Vp-p (H•RATE)
IC304-32 DIS OFF 5.0Vp-p (H•RATE)
PWM IRIS
ϕH CLEAR PULSE
CP
CLOCK
HD
VD
BF
SYNC
CP2
BLK
LINE SELECT HOLD
WHITE BALANCE
COLOUR SEPARATION TIME SHARING
GAIN CONTROL
LPF
COLOUR DIFFRENCIA MATRIX
CLOCK
WRITE ENABLE
READ ENABLE
IRQ
DSP MICOM INTERFASE
DATA
ADDRES
BF
SYNC
CP
BLK
CSPC
IC304-60 DIS ON 3.8Vp-p (H•RATE)
IC304-60 DIS OFF 3.8Vp-p (H•RATE)
IC302 (L.S.I. DIGITAL IMAGE STABILIZER)
CSPC IN
CSPC OUT
1H DLY DIGITAL VIDEO SIGNAL DI0~DI7
PRE-VIDEO
DATA OUT
DIGITAL VIDEO SIGNAL IN0~IN7
MOVEMENT DETECTION
DIS MICOM INTERFACE
DATA MD0~MD7
VCTRL
⑳ IC304
ADDRESS MA0~MA6
CIP SELECT CS1~CS3
IRQ
WE
RE
OE
RSTR
RAD
WAE/RAE
WAD
RSTW
WE
POR
HCLR
CLOCK
HD
VD
BLK
IC308 (DSP MICRO PROCESSER)
DATA DB0~DB7
ADDRESS AD0~AD7
WE
RE
IRQ
VD
LD
AF N/F
VMD 1
VMD 2
VMD 3
IR DET
IC310 ①
IC311 ⑮
IC702 ㊿
IC201 ⑧ ⑨ ⑩
IC705 ⑭
IC308-49 STOP 3.8Vp-p (V) RAMP GENERATOR
IC308-48 STOP 3.8Vp-p (V) RAMP GENERATOR
VD (IC308-23)
IC308-24 4.0V
STOP (V•RATE)
U/V
CI
SER
SER
SER
SER
E. Z

Back Page:
SENSOR & DIGI. MEMO. Section

GITAL C SIGNAL Y SIGNAL R-Y SIGNAL B-Y SIGNAL


IC309 (LSI:ELECTRIC ZOOM)
U/V SELECT
VCTRL
IC304-32 DIS ON
4.2Vp-p (H•RATE)
IC304-32 DIS OFF
5.0Vp-p (H•RATE)
IC304-20 DIS MODE
3.8Vp-p (V•RATE)
APERTURE
HIGH LIGHT APERTURE
AUTO KNEE
DIGITAL Y SIGNAL Y00~Y07
Y-E ZOOM/D. MIX PROCESSOR
NORMAL
MIX
GAINα
DIS/E. ZOOM
V. ZOOM UP
H. ZOOM UP
GAIN (1-α)
WHITE BALANCE
COLOUR SEPARATION TIME SHARING
GAIN CONTROL
LPF
COLOUR DIFFRENCIAL MATRIX
DIGITAL C SIGNAL C0~C7
C-E ZOOM/D. MIX PROCESSOR (SAME AS Y)
4BIT-8BIT CONV.
8BIT-4BIT CONV.
DIGITAL C SIGNAL CM00~CM03
MEMORY C SIGNAL CFH0~CFH4
BLK
BF
SYNC
CP
FP3011 3 SYNC
FP3011 4 BLK
FP3011 9 CP
FP3011 10 BF
TO VTR
CLOCK
WRITE ENABLE
READ ENABLE
IRQ
DSP MICOM INTERFASE
DATA
ADDRESS
HCLR
CSPEC
DATA MD0~MD7
ADDRESS MA0~MA3
C.S E13, 14, 15 (3BIT)
WE
RE
IC304-60 DIS ON
3.8Vp-p (H•RATE)
IC304-60 DIS OFF
3.8Vp-p (H•RATE)
IC313 (D/A CONVERTOR)
DIGITAL Y SIGNAL YOUT0~YOUT7
DIGITAL C SIGNAL COUT0~COUT7
AVDD
8BIT 3 CH D/A CONVERTER
Y
R-Y
B-Y
IC313
580m
IC308 (DSP MICRO PROCESSER)
DATA DB0~DB7
ADDRESS AD0~AD7
WE
RE
IRQ
VD
LD
AF N/F
VMD 1
VMD 2
VMD 3
IR DET
IC310
IC311
IC702
IC201
IC705
RDY/BUSY
CIP SELECT
SERIAL DATA
CLOCK
IC312 (EE PROM)
R/B
C.S
D. IN
D. OUT
CLK IN
IC308-50 STOP
3.8Vp-p (V) RAMP GENERATOR
IC308-49 STOP
3.8Vp-p (V) RAMP GENERATOR
IC308-48 STOP
3.8Vp-p (V) RAMP GENERATOR
QR301
SERIAL I/O
SIO
B302 2
TO EVF
FRM VTR (FP304- 21)
VD (IC308-23) 4.0Vp-p
CAMERA CLOCK
TO DIGI. MEMO EVR VTR
X301
IC308-24 4.0Vp-p
STOP (V•RATE)
DIS C.S
DIS BACK
E. ZOOM BACK
CL304
CL303
IC307
RESET
IC308-30 STOP
2.5Vp-p (H) DIS MODE
IC303 (DIS MICRO PROCESSER)
DATA MD0~MD7
ADDRESS MA0~MA5
CIP SELECT CS1~CS2
RESET
S. CLOCK
X302
CLK. IN
DSP. C.S
FAR
NEAR
P301 4
P301 5
MFF
MFN
CLK IN
R/B
AFCS
TO AF IC702
IC303-30 DIS MODE
2.0Vp-p (H•RATE)
FM. WRITE STOP (H)
WIPE
Q301
AF IC702
HD (B301-27) 3.0Vp-p
IC304-62 4.8Vp-p
IC304-63 4.8Vp-p
IC304-64 4.8Vp-p
IC304-65 4.8Vp-p
STOP (H) RAMP GENERATOR
IC304-72 4.0Vp-p
IC304-73 4.0Vp-p
IC304-74 4.0Vp-p
IC304-75 4.0Vp-p
IC311
OB CONT
Z. B-
Z. B+
HOLE BIAS
SUB CONT
PWM
BCBM (R-Y)
SYNC CONT
FADE
BCBM (B-Y)
AGC
AD CONT
D/A
LOAD
CLOCK
DATA

☐ B-Y SIGNAL

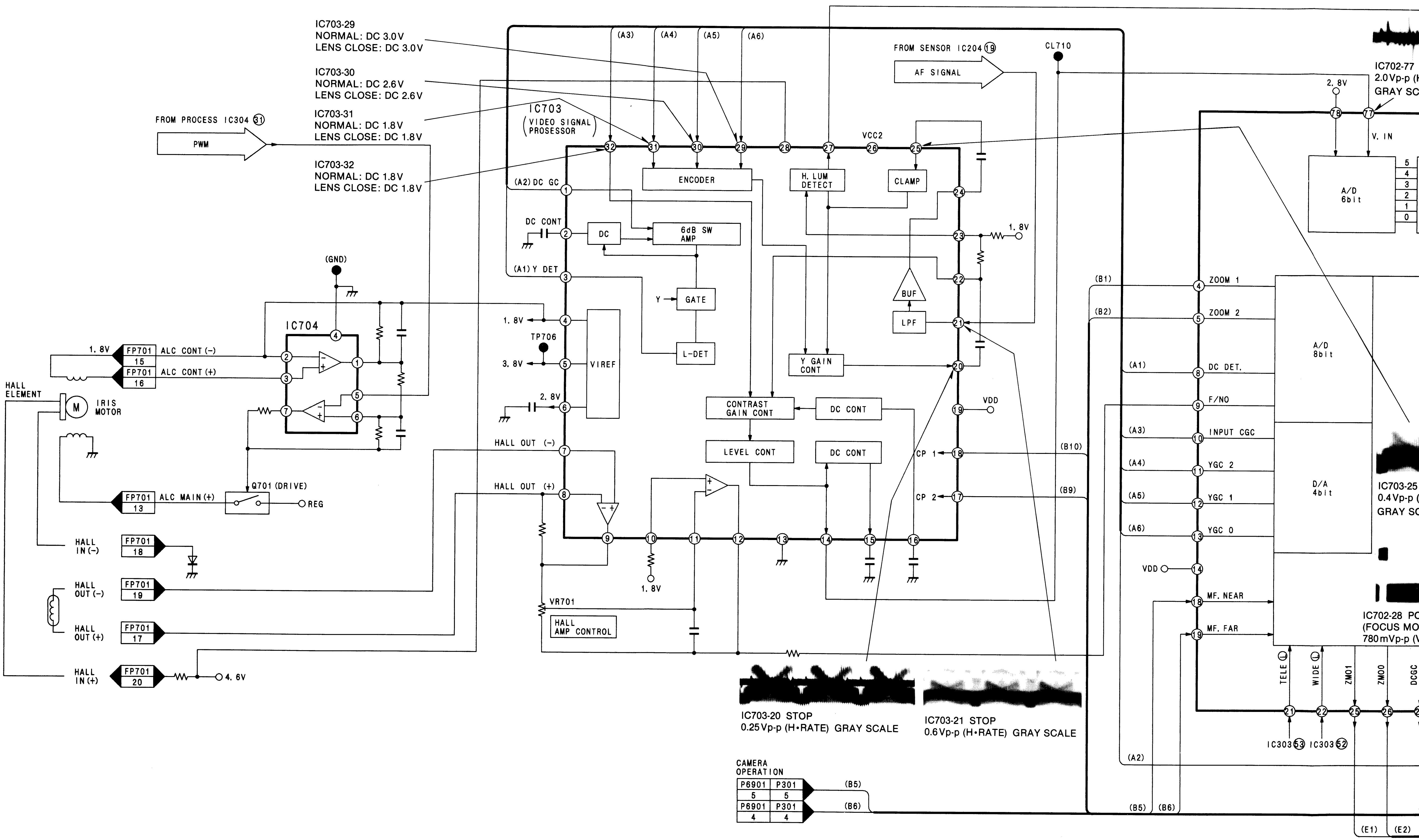


ECTRIC ZOOM)
IC304-20 DIS MODE
3.8Vp-p (V•RATE)
Y-E ZOOM/D. MIX PROCESSOR
NORMAL
MIX
GAINα
MIX
DIS/E. ZOOM
DIS/E. ZOOM
H. ZOOM UP
V. ZOOM UP
DIS/E. ZOOM
MIX
GAIN(1−α)
Y0 30
Y7 37
C-E ZOOM/D. MIX PROCESSOR
(SAME AS Y)
C0 39
C6 45
C7 47
4BIT→8BIT
CONV.
8BIT→4BIT
CONV.
CSPEC 68
DATA
MD0~MD7
9 ~ 2
ADDRESS
MA0~MA3
18 ~ 23
C.S
E13. 14. 15
(3BIT)
14 15 17
WE 10
RE 11
DIGITAL C
SIGNAL
CM00~CM03
40 ~ 43
MEMORY C
SIGNAL
CFH0~CFH4
34 ~ 37
DIGITAL Y SIGNAL
YOUT0~YOUT7
DIGITAL C SIGNAL
COUT0~COUT7
IC313
(D/A CONVERTOR)
AVDD 19
8BIT
3 CH
D/A
CONVERTER
Y 25
R-Y 27
B-Y 29
9
16
45
48
1
4
Q303
IC313-25 STOP
580mVp-p (H•RATE) COLOUR BAR
IC313-27 STOP
0.4Vp-p (H•RATE) COLOUR BAR
IC313-29 STOP
0.6Vp-p (H•RATE) COLOUR BAR
B305 13
B305 14
B305 15
TITLE
MIX
PROCESS
(REFER TO
DIGITAL MEMORY
BLOCK DIAGRAM)
B305 11
B305 16
B306 9
IC316-3 STOP
1.1Vp-p (H•RATE) COLOUR BAR
IC316-10 STOP
0.4Vp-p (H•RATE) COLOUR BAR
IC316
(FILTER ANALOGUE)
CLAMP
SYNC
GC
LPF
LPF
LPF
3
7
9
16
14
10
13
11
B-Y
FP304 8
FP304 15
FP304 11
TO VTR
4
1
6
IC304 7 SYNC
1.8V
IC304 34 CP2A
IC316-11 STOP
0.6Vp-p (H•RATE) COLOUR BAR
HD (B301-27) 3.0Vp-p
IC304-62 4.8Vp-p
IC304-63 4.8Vp-p
IC304-64 4.8Vp-p
IC304-65 4.8Vp-p
STOP (H) RAMP GENERATOR
HD (B301-27) 3.0Vp-p
IC304-72 4.0Vp-p
IC304-73 4.0Vp-p
IC304-74 4.0Vp-p
IC304-75 4.0Vp-p
STOP (H) RAMP GENERATOR
IC311
OB CONT 2
Z. B− 3
Z. B+ 4
HOLE BIAS 5
SUB CONT 6
PWM 7
D/A
BCBM (R−Y) 8
SYNC CONT 9
FADE 12
BCBM (B−Y) 13
AGC 18
AD CONT 19
B301 17
TO SENSOR
TO AF
B301 5
TO SENSOR
TO AF
FP304 14
TO VTR
TO IC316 5
B301 12
TO SENSOR
FP304 11
TO VTR
B301 18
TO SENSOR
B301 10
TO SENSOR
IC308 53
15 LOAD
IC303 44
16 CLOCK
IC303 45
17 DATA
HD (B301-27) 3.0Vp-p
IC309-47 4.0Vp-p
IC309-45 4.0Vp-p
IC309-44 4.0Vp-p
IC309-43 4.0Vp-p
STOP (H) RAMP GENERATOR
HD (B301-27) 3.0Vp-p
IC309-37 3.8Vp-p
IC309-36 3.8Vp-p
IC309-35 3.8Vp-p
IC309-34 3.8Vp-p
STOP (H) RAMP GENERATOR
ERATOR
PROCESSER)
77 ~ 70
DATA
MD0~MD7
14 ~ 9 1 80 79
ADDRESS
MA0~MA5
CIP SELECT
CS1~CS2
16 RESET
25 VD
45 D. IN
46 D. OUT
44 CLK. IN
29
30
S. CLOCK
30 CLK IN
28 DSP. C. S
24 IRQ
IC303-30 DIS MODE
2.0Vp-p (H•RATE)
WE 18
RE 17
FAR 37
NEAR 38
P301 4
P301 5
MFF 42
MFN 43
CLK IN 48
R/B 51
AFCS 27
19
18
41
17
29
TO AF
IC702
FM. WRITE
STOP Ⓗ 55
WIPE 54
D. IN 49
D. OUT 50
IC702 55
IC702 20
Q301
42 AF
IC702

IC301~IC303
PIN NO. FOR ZA4030

① RSTW : RESET WRITE
② $\overline{\text{WAE}}$: WRITE ADDRESS ENABLE
③ WAD : WRITE ADDRESS
⑨ POR : POWER ON RESET
⑲ OE : OUTPUT ENABLE
㉕ RAD : READ ADDRESS
㉖ RAE : READ ADDRESS ENABLE
㉗ RSTR : RESET READ
④ WE : WRITE ENABLE

3-5. AUTO FOCUS BLOCK DIAGRAM



IC703-29
NORMAL: DC 3.0V
LENS CLOSE: DC 3.0V

IC703-30
NORMAL: DC 2.6V
LENS CLOSE: DC 2.6V

IC703-31
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V

IC703-32
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V

IC703-20 STOP
0.25Vp-p (H•RATE) GRAY SCALE

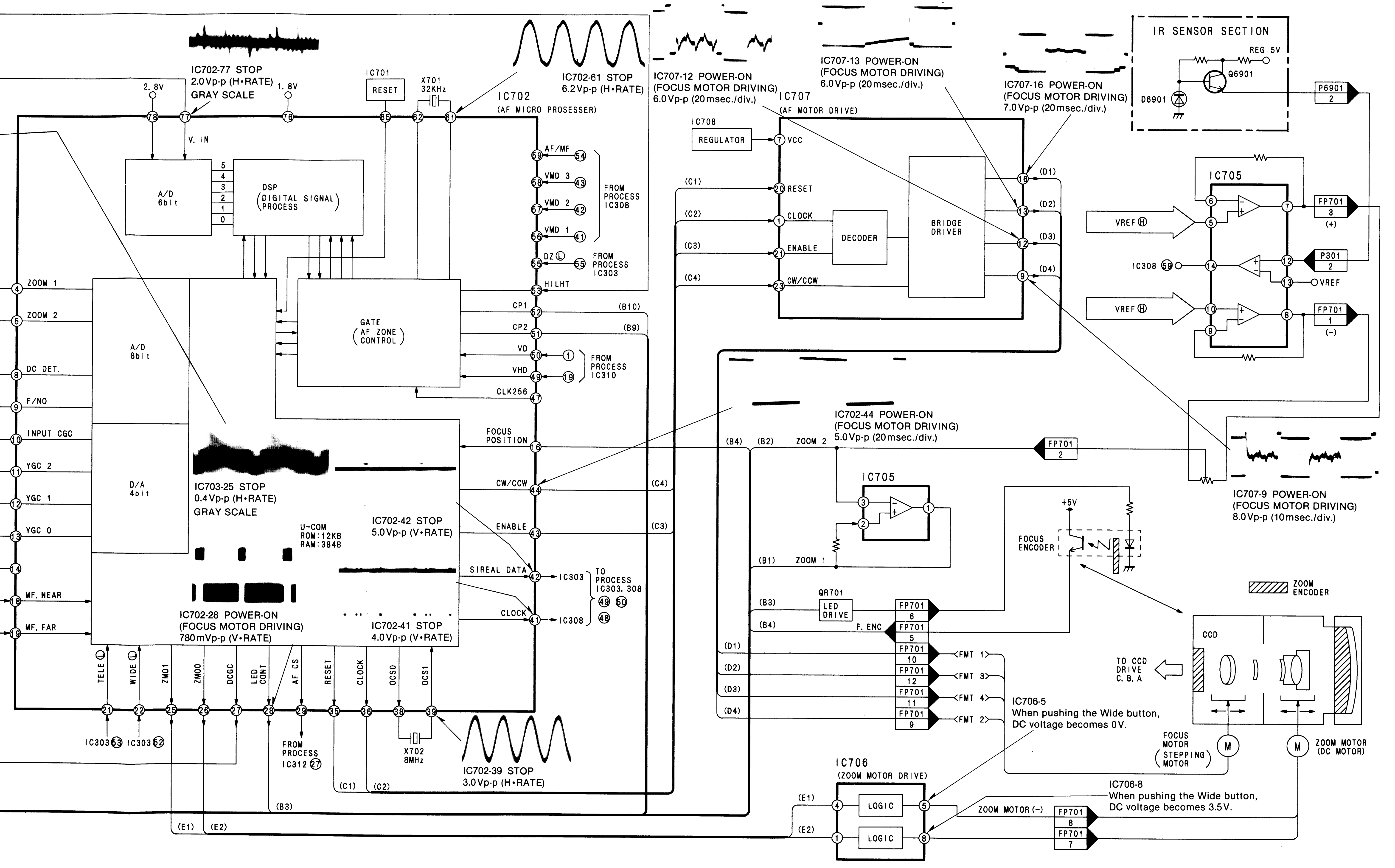
IC703-21 STOP
0.6Vp-p (H•RATE) GRAY SCALE

IC702-77
2.0Vp-p (H
GRAY SC

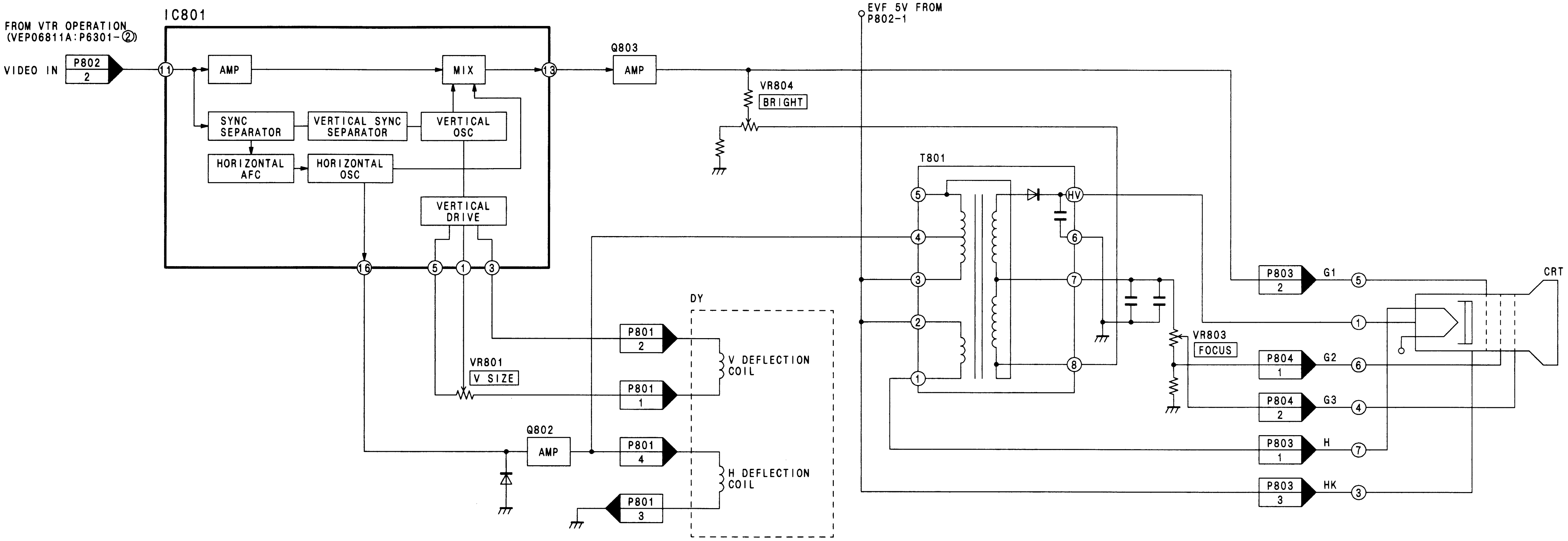
IC703-25
0.4Vp-p (
GRAY SC

IC702-28 PC
(FOCUS MO
780mVp-p (V

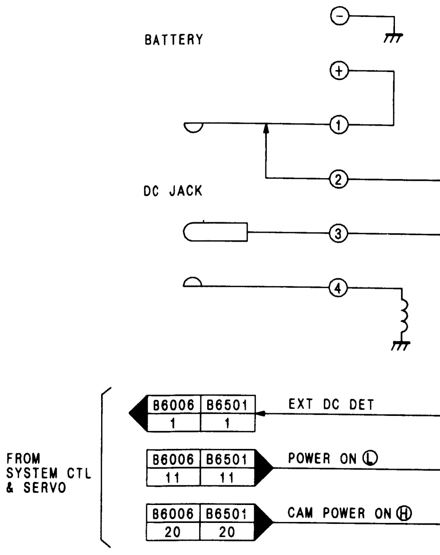
FROM PROCESS IC304 ㉛
PWM
IC703
(VIDEO SIGNAL PROCESSOR)
(A3)
(A4)
(A5)
(A6)
FROM SENSOR IC204 ⑲
AF SIGNAL
CL710
VCC2
ENCODER
H. LUM DETECT
CLAMP
(A2) DC GC
DC CONT
DC
6dB SW AMP
(A1) Y DET
(GND)
Y
GATE
L-DET
BUF
LPF
1. 8V
TP706
3. 8V
2. 8V
VIREF
Y GAIN CONT
CONTRAST GAIN CONT
DC CONT
LEVEL CONT
DC CONT
VDD
CP 1
CP 2
HALL OUT (-)
HALL OUT (+)
VR701
HALL AMP CONTROL
IC704
FP701 15
FP701 16
ALC CONT (-)
ALC CONT (+)
HALL ELEMENT
M
IRIS MOTOR
FP701 13
ALC MAIN (+)
Q701 (DRIVE)
REG
HALL IN (-)
FP701 18
HALL OUT (-)
FP701 19
HALL OUT (+)
FP701 17
HALL IN (+)
FP701 20
4. 6V
CAMERA OPERATION
P6901 5
P301 5
P6901 4
P301 4
(B5)
(B6)
(B1)
(B2)
(B10)
(B9)
(A1)
(A3)
(A4)
(A5)
(A6)
(A2)
(E1)
(E2)
2. 8V
V. IN
A/D 6bit
5
4
3
2
1
0
ZOOM 1
ZOOM 2
DC DET.
F/NO
INPUT CGC
YGC 2
YGC 1
YGC 0
VDD
MF. NEAR
MF. FAR
A/D 8bit
D/A 4bit
TELE
WIDE
ZM01
ZM00
DCGC
IC303 53
IC303 52


IC702-77 STOP
2.0Vp-p (H•RATE)
GRAY SCALE
2.8V
1.8V
V. IN
IC701
RESET
X701
32KHz
IC702
(AF MICRO PROSESSER)
IC702-61 STOP
6.2Vp-p (H•RATE)
A/D
6bit
DSP
(DIGITAL SIGNAL PROCESS)
AF/MF
VMD 3
VMD 2
VMD 1
FROM
PROCESS
IC308
DZ
FROM
PROCESS
IC303
HILHT
CP1
CP2
VD
VHD
CLK256
FROM
PROCESS
IC310
GATE
(AF ZONE CONTROL)
ZOOM 1
ZOOM 2
DC DET.
F/NO
INPUT CGC
YGC 2
YGC 1
YGC 0
MF. NEAR
MF. FAR
A/D
8bit
D/A
4bit
IC703-25 STOP
0.4Vp-p (H•RATE)
GRAY SCALE
U-COM
ROM:12KB
RAM:384B
IC702-42 STOP
5.0Vp-p (V•RATE)
IC702-28 POWER-ON
(FOCUS MOTOR DRIVING)
780mVp-p (V•RATE)
IC702-41 STOP
4.0Vp-p (V•RATE)
FOCUS
POSITION
CW/CCW
ENABLE
SIREAL DATA
CLOCK
TO
PROCESS
IC303, 308
IC303
IC308
TELE
WIDE
ZMO1
ZMO0
DCGC
LED CONT
AF CS
RESET
CLOCK
OCS0
OCS1
IC303 ㊸
IC303 ㊷
FROM
PROCESS
IC312 ㉗
X702
8MHz
IC702-39 STOP
3.0Vp-p (H•RATE)
(C1)
(C2)
(C3)
(C4)
(B3)
(B9)
(B10)
(E1)
(E2)
IC707-12 POWER-ON
(FOCUS MOTOR DRIVING)
6.0Vp-p (20msec./div.)
IC707-13 POWER-ON
(FOCUS MOTOR DRIVING)
6.0Vp-p (20msec./div.)
IC707-16 POWER-ON
(FOCUS MOTOR DRIVING)
7.0Vp-p (20msec./div.)
IC707
(AF MOTOR DRIVE)
IC708
REGULATOR
VCC
RESET
CLOCK
ENABLE
CW/CCW
DECODER
BRIDGE
DRIVER
(D1)
(D2)
(D3)
(D4)
IR SENSOR SECTION
REG 5V
Q6901
D6901
P6901
IC705
VREF Ⓗ
FP701
(+)
(-)
P301
IC308 ㊾
VREF
IC702-44 POWER-ON
(FOCUS MOTOR DRIVING)
5.0Vp-p (20msec./div.)
(B4)
(B2)
ZOOM 2
(B1)
ZOOM 1
IC707-9 POWER-ON
(FOCUS MOTOR DRIVING)
8.0Vp-p (10msec./div.)
+5V
FOCUS
ENCODER
ZOOM
ENCODER
QR701
LED
DRIVE
F. ENC
FMT 1
FMT 3
FMT 4
FMT 2
CCD
TO CCD
DRIVE
C. B. A
FOCUS
MOTOR
(STEPPING MOTOR)
ZOOM MOTOR
(DC MOTOR)
IC706-5
When pushing the Wide button,
DC voltage becomes 0V.
IC706
(ZOOM MOTOR DRIVE)
LOGIC
ZOOM MOTOR (-)
IC706-8
When pushing the Wide button,
DC voltage becomes 3.5V.

3-6. E.V.F. BLOCK DIAGRAM

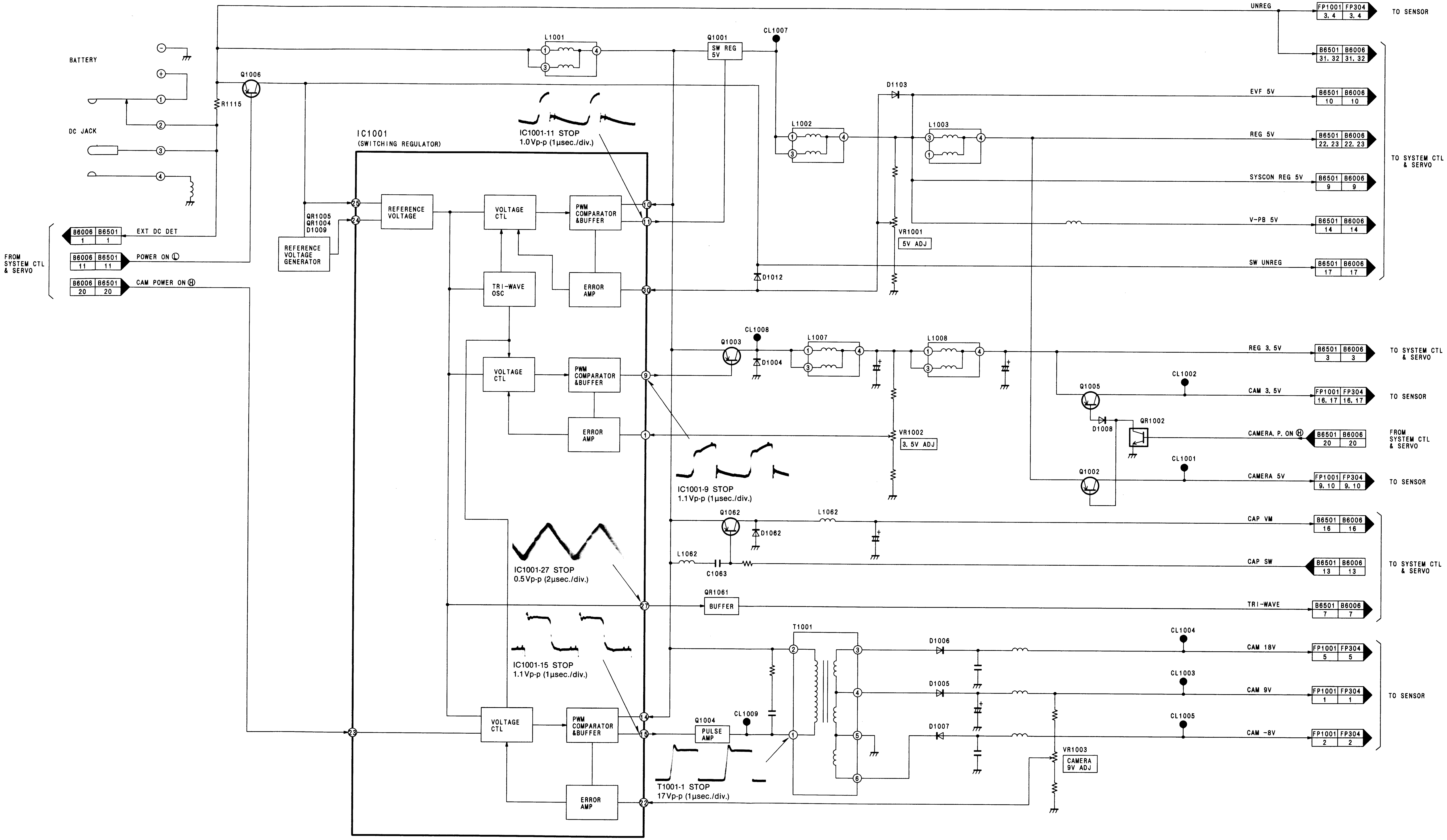

FROM VTR OPERATION
(VEP06811A:P6301-②)
VIDEO IN
P802
2
IC801
AMP
MIX
SYNC SEPARATOR
VERTICAL SYNC SEPARATOR
VERTICAL OSC
HORIZONTAL AFC
HORIZONTAL OSC
VERTICAL DRIVE
⑪
⑬
⑯
⑤
①
③
Q803
AMP
VR804
BRIGHT
EVF 5V FROM
P802-1
T801
HV
Q802
AMP
P801
DY
V DEFLECTION COIL
H DEFLECTION COIL
VR801
V SIZE
VR803
FOCUS
P803
P804
G1
G2
G3
H
HK
CRT

3-7. POWER BLOCK DI


BATTERY
DC JACK
FROM
SYSTEM CTL
& SERVO
B6006
B6501
EXT DC DET
POWER ON Ⓛ
CAM POWER ON Ⓗ

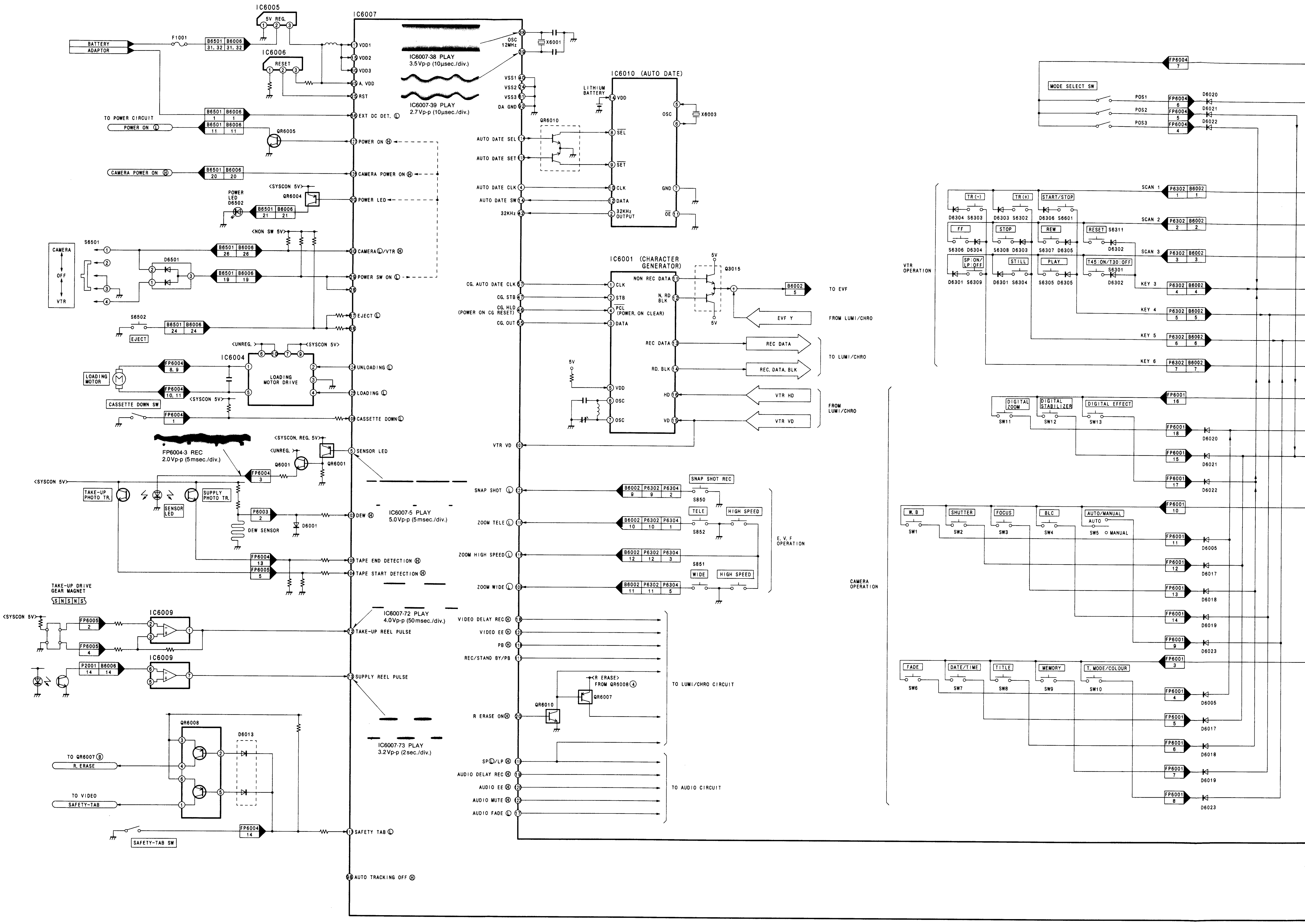
Back Page:
AUTO FOCUS Section

3-7. POWER BLOCK DIAGRAM

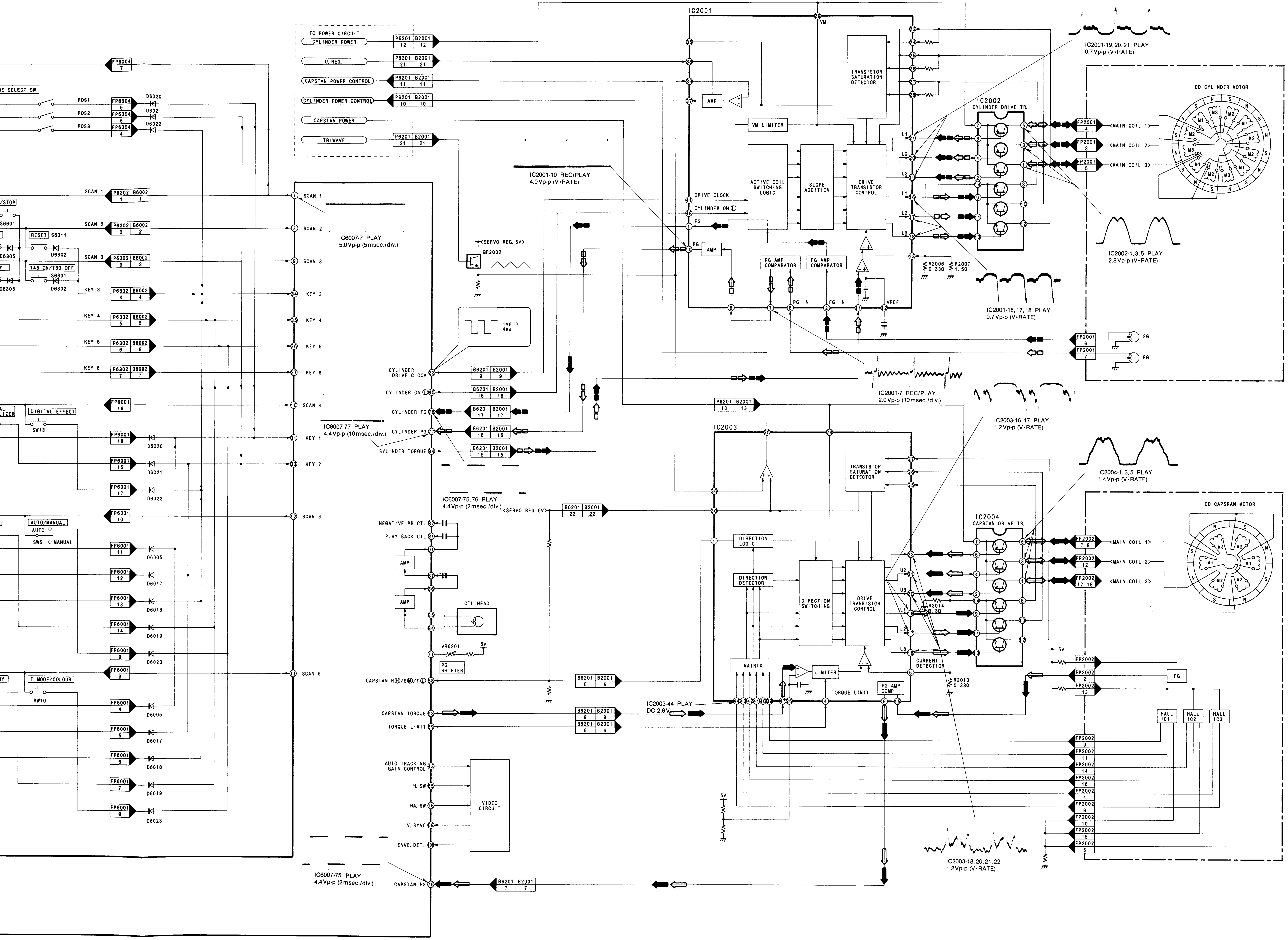

BATTERY
DC JACK
Q1006
R1115
EXT DC DET
B6006 B6501 1 1
FROM SYSTEM CTL & SERVO
POWER ON Ⓛ
B6006 B6501 11 11
CAM POWER ON Ⓗ
B6006 B6501 20 20
QR1005 QR1004 D1009
REFERENCE VOLTAGE GENERATOR
IC1001 (SWITCHING REGULATOR)
REFERENCE VOLTAGE
VOLTAGE CTL
PWM COMPARATOR &BUFFER
TRI-WAVE OSC
ERROR AMP
L1001
Q1001 SW REG 5V
CL1007
D1103
L1002
L1003
D1012
VR1001 5V ADJ
IC1001-11 STOP
1.0Vp-p (1μsec./div.)
UNREG
FP1001 FP304 3, 4 3, 4
TO SENSOR
B6501 B6006 31, 32 31, 32
EVF 5V
B6501 B6006 10 10
REG 5V
B6501 B6006 22, 23 22, 23
SYSCON REG 5V
B6501 B6006 9 9
V-PB 5V
B6501 B6006 14 14
SW UNREG
B6501 B6006 17 17
TO SYSTEM CTL & SERVO
CL1008
Q1003
D1004
L1007
L1008
VR1002 3.5V ADJ
IC1001-9 STOP
1.1Vp-p (1μsec./div.)
REG 3.5V
B6501 B6006 3 3
TO SYSTEM CTL & SERVO
CL1002
Q1005
CAM 3.5V
FP1001 FP304 16, 17 16, 17
TO SENSOR
D1008
QR1002
CAMERA. P. ON Ⓗ
B6501 B6006 20 20
FROM SYSTEM CTL & SERVO
CL1001
Q1002
CAMERA 5V
FP1001 FP304 9, 10 9, 10
TO SENSOR
Q1062
D1062
L1062
CAP VM
B6501 B6006 16 16
L1062
C1063
CAP SW
B6501 B6006 13 13
TO SYSTEM CTL & SERVO
IC1001-27 STOP
0.5Vp-p (2μsec./div.)
QR1061 BUFFER
TRI-WAVE
B6501 B6006 7 7
IC1001-15 STOP
1.1Vp-p (1μsec./div.)
T1001
Q1004 PULSE AMP
CL1009
D1006
D1005
D1007
CL1004
CAM 18V
FP1001 FP304 5 5
CL1003
CAM 9V
FP1001 FP304 1 1
CL1005
CAM -8V
FP1001 FP304 2 2
TO SENSOR
VR1003 CAMERA 9V ADJ
T1001-1 STOP
17Vp-p (1μsec./div.)

3-8. SYSTEM CONTROL & SERVO BLOCK DIAGRAM

CAPSTAN SERVO

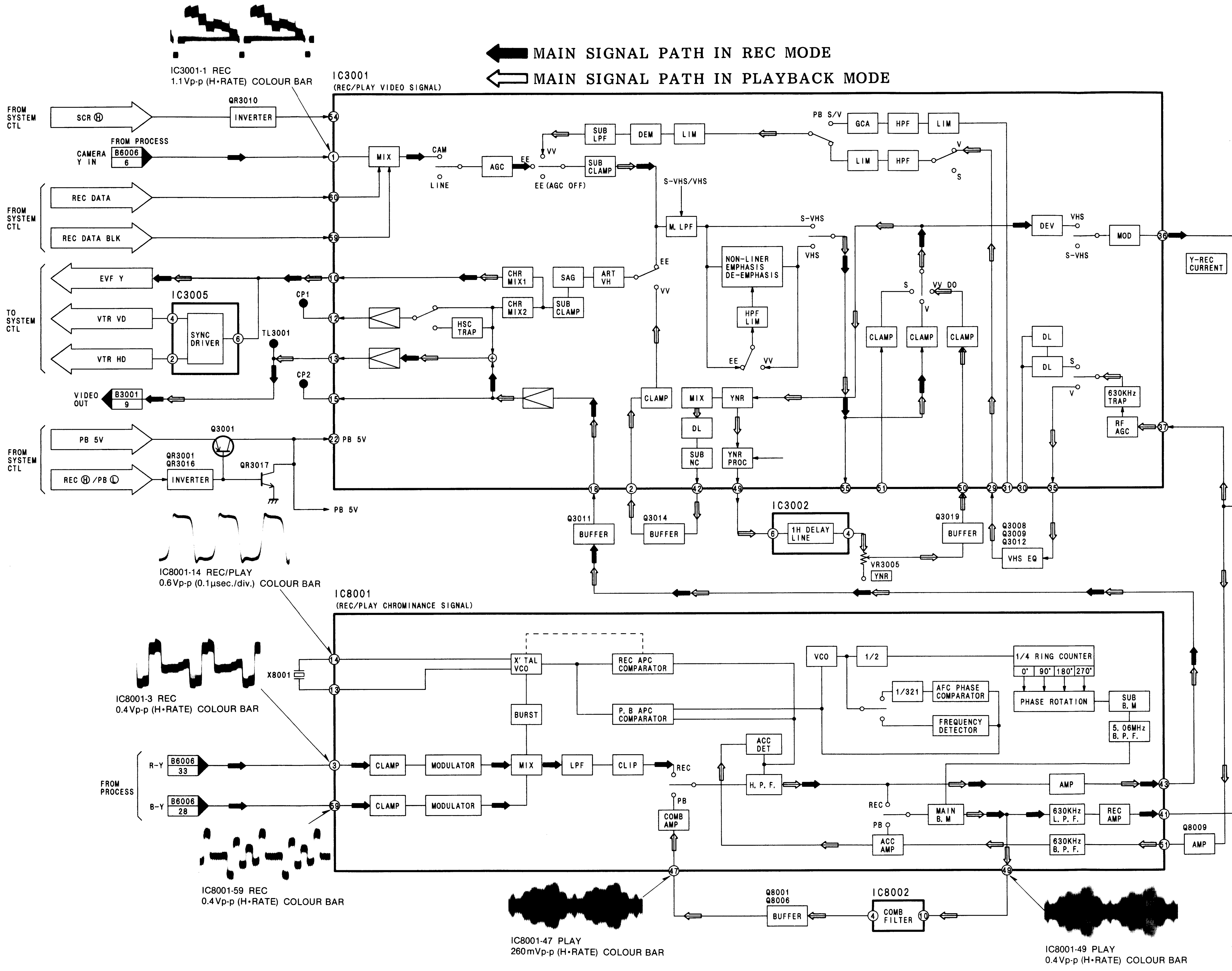

IC6005
5V REG.
IC6006
RESET
IC6007
BATTERY
ADAPTOR
F1001
B6501 B6006
VDD1
VDD2
VDD3
A. VDD
RST
EXT DC DET. Ⓛ
TO POWER CIRCUIT
POWER ON Ⓛ
QR6005
POWER ON Ⓗ
CAMERA POWER ON Ⓗ
CAMERA POWER ON Ⓗ
<SYSCON 5V>
QR6004
POWER LED
D6502
POWER LED
<NON SW 5V>
S6501
CAMERA
OFF
VTR
D6501
CAMERA Ⓛ/VTR Ⓗ
POWER SW ON Ⓛ
S6502
EJECT
EJECT Ⓛ
<UNREG.>
<SYSCON 5V>
IC6004
LOADING MOTOR DRIVE
LOADING MOTOR
FP6004
UNLOADING Ⓛ
LOADING Ⓛ
CASSETTE DOWN SW
CASSETTE DOWN Ⓛ
<SYSCON. REG. 5V>
<UNREG.>
Q6001
QR6001
FP6004-3 REC
2.0Vp-p (5msec./div.)
SENSOR LED
TAKE-UP PHOTO TR.
SENSOR LED
SUPPLY PHOTO TR.
P6003
DEW SENSOR
D6001
DEW Ⓗ
IC6007-5 PLAY
5.0Vp-p (5msec./div.)
FP6005
TAPE END DETECTION Ⓗ
TAPE START DETECTION Ⓗ
TAKE-UP DRIVE GEAR MAGNET
IC6009
IC6007-72 PLAY
4.0Vp-p (50msec./div.)
TAKE-UP REEL PULSE
P2001
SUPPLY REEL PULSE
IC6007-73 PLAY
3.2Vp-p (2sec./div.)
QR6008
D6013
TO QR6007 Ⓑ
R. ERASE
TO VIDEO
SAFETY-TAB
SAFETY-TAB SW
SAFETY TAB Ⓛ
AUTO TRACKING OFF Ⓗ
IC6007-38 PLAY
3.5Vp-p (10μsec./div.)
IC6007-39 PLAY
2.7Vp-p (10μsec./div.)
OSC 12MHz
X6001
VSS1
VSS2
VSS3
DA GND
IC6010 (AUTO DATE)
LITHIUM BATTERY
QR6010
AUTO DATE SEL
AUTO DATE SET
AUTO DATE CLK
AUTO DATE SW
32KHz
SEL
SET
CLK
DATA
32KHz OUTPUT
OSC
X6003
GND
OE
IC6001 (CHARACTER GENERATOR)
Q3015
NON REC DATA
N. RD BLK
CG. AUTO DATE CLK
CG. STB
CG. HLD (POWER ON CG RESET)
CG. OUT
PCL (POWER. ON CLEAR)
TO EVF
EVF Y
FROM LUMI/CHRO
REC DATA
REC. DATA. BLK
TO LUMI/CHRO
VTR HD
VTR VD
FROM LUMI/CHRO
VTR VD
SNAP SHOT Ⓛ
SNAP SHOT REC
S850
TELE
HIGH SPEED
S852
ZOOM TELE Ⓛ
ZOOM HIGH SPEED Ⓛ
S851
WIDE
HIGH SPEED
ZOOM WIDE Ⓛ
E. V. F OPERATION
VIDEO DELAY REC Ⓗ
VIDEO EE Ⓗ
PB Ⓗ
REC/STAND BY/PB
<R ERASE> FROM QR5008 ④
QR6007
R ERASE ON Ⓗ
TO LUMI/CHRO CIRCUIT
SP Ⓛ/LP Ⓗ
AUDIO DELAY REC Ⓗ
AUDIO EE Ⓗ
AUDIO MUTE Ⓗ
AUDIO FADE Ⓛ
TO AUDIO CIRCUIT
MODE SELECT SW
POS1
POS2
POS3
D6020
D6021
D6022
VTR OPERATION
TR(−)
TR(+)
START/STOP
D6304 S6303
D6303 S6302
D6306 S6601
FF
STOP
REW
RESET S6311
S6306 D6304
S6308 D6303
S6307 D6305
D6302
SP:ON/LP:OFF
STILL
PLAY
T45:ON/T30:OFF
S6301
D6301 S6309
D6301 S6304
S6305 D6305
D6302
SCAN 1
SCAN 2
SCAN 3
KEY 3
KEY 4
KEY 5
KEY 6
P6302 B6002
DIGITAL ZOOM
DIGITAL STABILIZER
DIGITAL EFFECT
SW11
SW12
SW13
FP6001
D6020
D6021
D6022
W. B
SHUTTER
FOCUS
BLC
AUTO/MANUAL
AUTO
MANUAL
SW1
SW2
SW3
SW4
SW5
D6005
D6017
D6018
D6019
D6023
CAMERA OPERATION
FADE
DATE/TIME
TITLE
MEMORY
T. MODE/COLOUR
SW6
SW7
SW8
SW9
SW10
D6005
D6017
D6018
D6019
D6023

◀■ CAPSTAN SERVO SPEED LOOP ⇦ CAPSTAN SERVO PHASE LOOP ◀■ CYLINDER SERVO SPEED LOOP ⇦□ CYLINDER SERVO PHASE LOOP

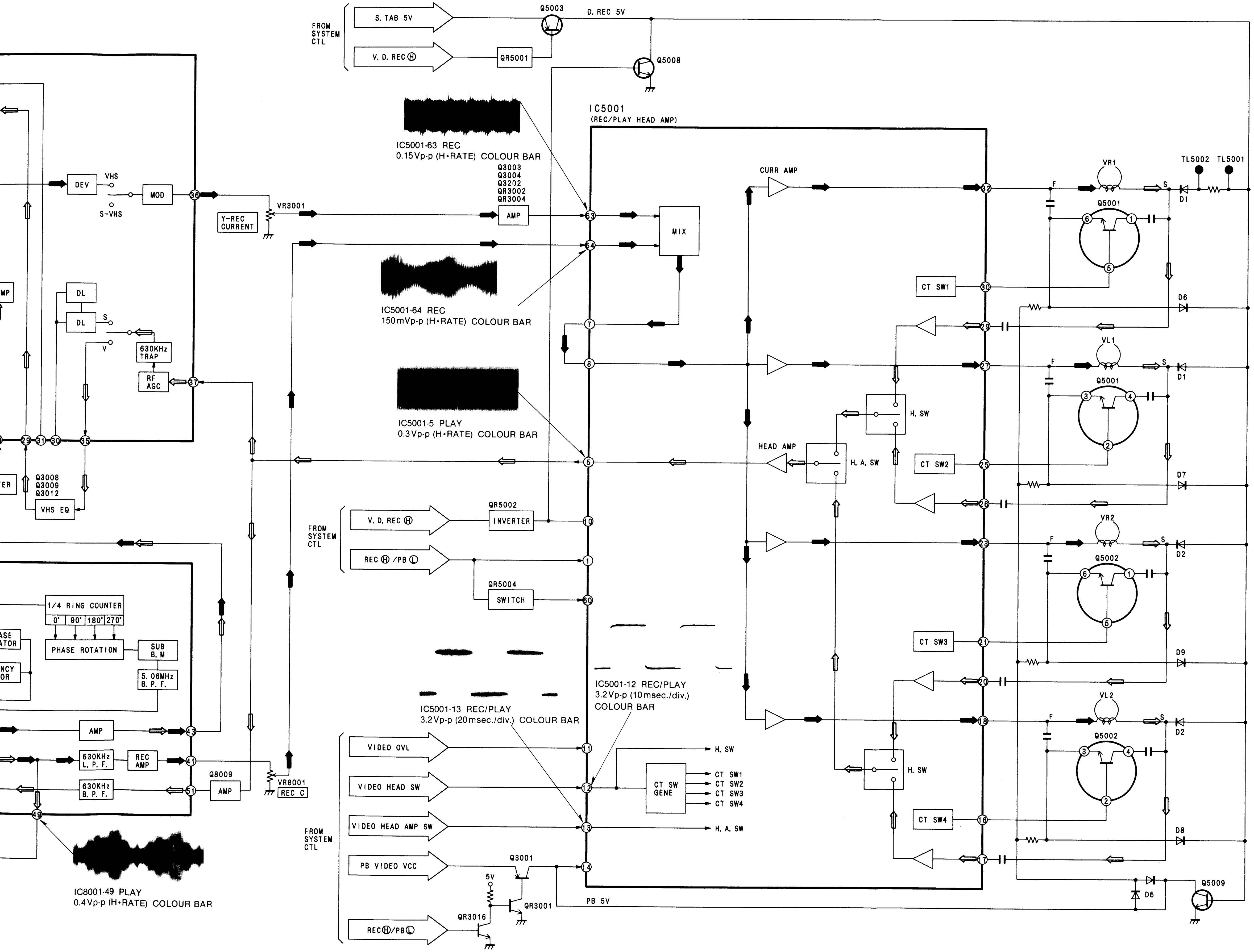


TO POWER CIRCUIT
CYLINDER POWER
U. REG.
CAPSTAN POWER CONTROL
CYLINDER POWER CONTROL
CAPSTAN POWER
TRIWAVE
P6201
B2001
IC2001
VM
TRANSISTOR SATURATION DETECTOR
AMP
VM LIMITER
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
DRIVE TRANSISTOR CONTROL
DRIVE CLOCK
CYLINDER ON
FG
PG
PG AMP COMPARATOR
FG AMP COMPARATOR
PG IN
FG IN
VREF
U1
U2
U3
L1
L2
L3
R2006 0.33Ω
R2007 1.5Ω
IC2002 CYLINDER DRIVE TR.
IC2001-19, 20, 21 PLAY 0.7Vp-p (V・RATE)
IC2002-1, 3, 5 PLAY 2.8Vp-p (V・RATE)
IC2001-16, 17, 18 PLAY 0.7Vp-p (V・RATE)
IC2001-10 REC/PLAY 4.0Vp-p (V・RATE)
IC2001-7 REC/PLAY 2.0Vp-p (10msec./div.)
DD CYLINDER MOTOR
FP2001
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
M1
M2
M3
N
S
FG
PG
SERVO REG. 5V
QR2002
1Vp-p 4μs
IC6007-7 PLAY 5.0Vp-p (5msec./div.)
FP6004
MODE SELECT SW
POS1
POS2
POS3
D6020
D6021
D6022
SCAN 1
SCAN 2
SCAN 3
SCAN 4
SCAN 5
SCAN 6
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
KEY 6
P6302
B6002
REC/STOP
S6601
RESET S6311
D6302
D6305
T45:ON/T30:OFF S6301
DIGITAL EFFECT
SW13
AUTO/MANUAL
AUTO
SW5 MANUAL
T. MODE/COLOUR
SW10
FP6001
D6005
D6017
D6018
D6019
D6023
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
CYLINDER PG
CYLINDER TORQUE
B6201
IC6007-77 PLAY 4.4Vp-p (10msec./div.)
IC6007-75, 76 PLAY 4.4Vp-p (2msec./div.)
NEGATIVE PB CTL
PLAY BACK CTL
AMP
CTL HEAD
VR6201
5V
PG SHIFTER
CAPSTAN R/S/F
CAPSTAN TORQUE
TORQUE LIMIT
AUTO TRACKING GAIN CONTROL
H. SW
HA. SW
V. SYNC
ENVE. DET.
VIDEO CIRCUIT
CAPSTAN FG
IC6007-75 PLAY 4.4Vp-p (2msec./div.)
IC2003
IC2003-16, 17 PLAY 1.2Vp-p (V・RATE)
IC2004-1, 3, 5 PLAY 1.4Vp-p (V・RATE)
DIRECTION LOGIC
DIRECTION DETECTOR
DIRECTION SWITCHING
DRIVE TRANSISTOR CONTROL
MATRIX
LIMITER
CURRENT DETECTION
FG AMP COMP
IC2003-44 PLAY DC 2.6V
R3014 0.33Ω
R3013 0.33Ω
IC2004 CAPSTAN DRIVE TR.
DD CAPSRAN MOTOR
FP2002
HALL IC1
HALL IC2
HALL IC3
IC2003-18, 20, 21, 22 1.2Vp-p (V・RATE)

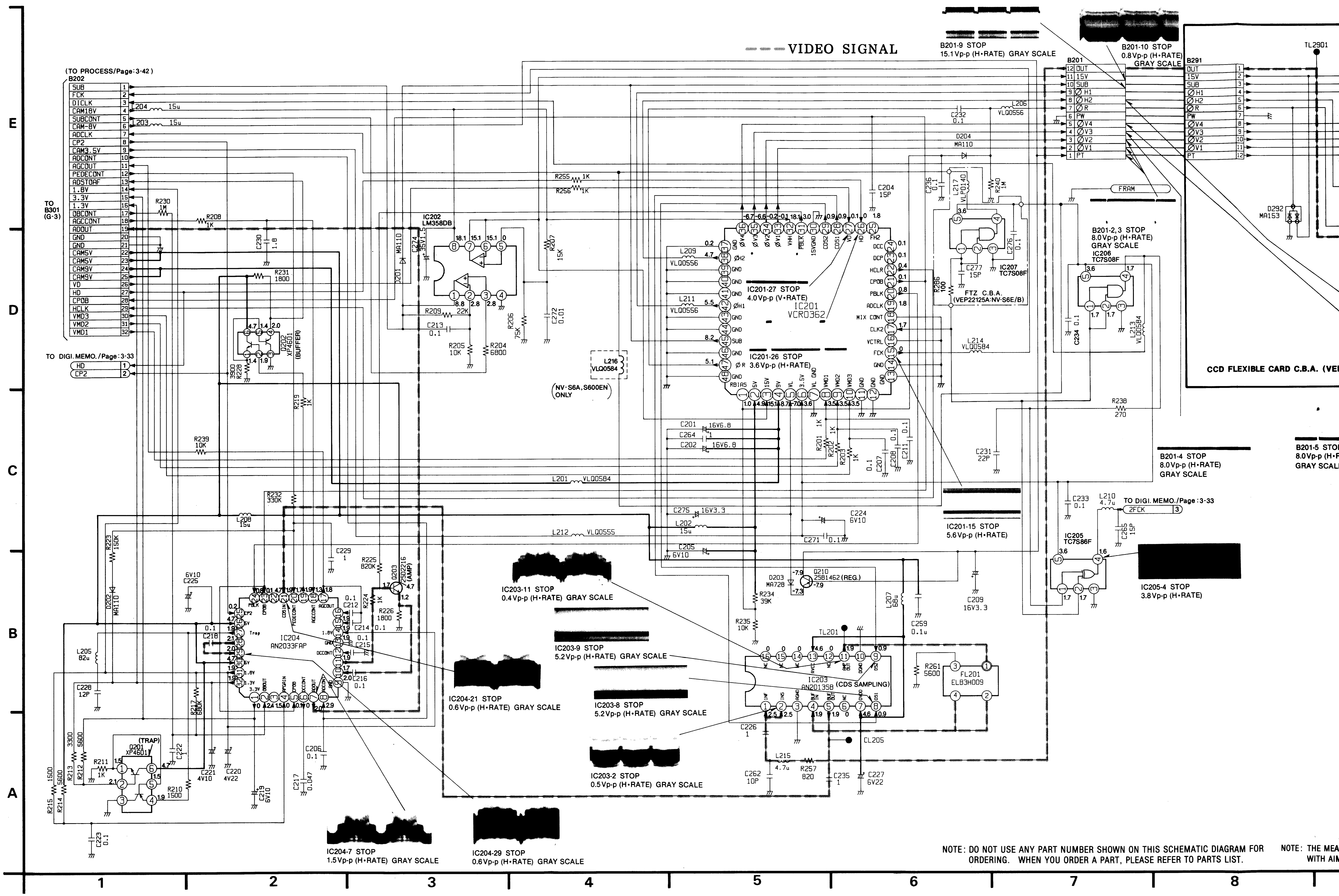
3-9. LUMINANCE/CHROMINANCE & HEAD AMP BLOCK DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
IC3001-1 REC
1.1Vp-p (H•RATE) COLOUR BAR
IC3001
(REC/PLAY VIDEO SIGNAL)
FROM SYSTEM CTL
SCR Ⓗ
QR3010
INVERTER
FROM PROCESS
CAMERA Y IN
B6006
6
REC DATA
REC DATA BLK
TO SYSTEM CTL
EVF Y
VTR VD
VTR HD
IC3005
SYNC DRIVER
TL3001
CP1
CP2
VIDEO OUT
B3001
9
PB 5V
REC Ⓗ/PB Ⓛ
Q3001
QR3001
QR3016
QR3017
PB 5V
MIX
CAM
LINE
AGC
EE
EE (AGC OFF)
VV
SUB LPF
SUB CLAMP
DEM
LIM
PB S/V
GCA
HPF
LIM
LIM
HPF
V
S
S-VHS/VHS
M. LPF
S-VHS
VHS
NON-LINER EMPHASIS DE-EMPHASIS
HPF LIM
EE
VV
DEV
VHS
S-VHS
MOD
Y-REC CURRENT
CHR MIX1
CHR MIX2
SAG
ART VH
SUB CLAMP
HSC TRAP
CLAMP
MIX
YNR
DL
SUB NC
YNR PROC
CLAMP
CLAMP
CLAMP
S
VV DO
V
DL
DL
S
V
630KHz TRAP
RF AGC
Q3011
BUFFER
Q3014
BUFFER
IC3002
1H DELAY LINE
VR3005
YNR
Q3019
BUFFER
Q3008
Q3009
Q3012
VHS EQ
IC8001-14 REC/PLAY
0.6Vp-p (0.1μsec./div.) COLOUR BAR
IC8001
(REC/PLAY CHROMINANCE SIGNAL)
X8001
X' TAL VCO
REC APC COMPARATOR
P. B APC COMPARATOR
BURST
VCO
1/2
1/4 RING COUNTER
0°
90°
180°
270°
1/321
AFC PHASE COMPARATOR
FREQUENCY DETECTOR
PHASE ROTATION
SUB B. M
5. 06MHz B. P. F.
ACC DET
IC8001-3 REC
0.4Vp-p (H•RATE) COLOUR BAR
FROM PROCESS
R-Y
B6006
33
B-Y
B6006
28
CLAMP
MODULATOR
CLAMP
MODULATOR
MIX
LPF
CLIP
REC
PB
COMB AMP
H. P. F.
AMP
REC
PB
MAIN B. M
ACC AMP
630KHz L. P. F.
REC AMP
630KHz B. P. F.
Q8009
AMP
IC8001-59 REC
0.4Vp-p (H•RATE) COLOUR BAR
IC8001-47 PLAY
260mVp-p (H•RATE) COLOUR BAR
Q8001
Q8006
BUFFER
IC8002
COMB FILTER
IC8001-49 PLAY
0.4Vp-p (H•RATE) COLOUR BAR

Back Page:
SYSTEM CTL & SERVO Section


FROM SYSTEM CTL
S. TAB 5V
V. D. REC Ⓗ
QR5001
Q5003
D. REC 5V
Q5008
IC5001-63 REC
0.15Vp-p (H•RATE) COLOUR BAR
Q3003
Q3004
Q3202
QR3002
QR3004
AMP
IC5001
(REC/PLAY HEAD AMP)
MIX
CURR AMP
DEV
VHS
S-VHS
MOD
Y-REC CURRENT
VR3001
IC5001-64 REC
150mVp-p (H•RATE) COLOUR BAR
DL
DL
S
V
630KHz TRAP
RF AGC
IC5001-5 PLAY
0.3Vp-p (H•RATE) COLOUR BAR
HEAD AMP
H. A. SW
H. SW
CT SW1
CT SW2
CT SW3
CT SW4
Q3008
Q3009
Q3012
VHS EQ
FROM SYSTEM CTL
V. D. REC Ⓗ
QR5002
INVERTER
REC Ⓗ /PB Ⓛ
QR5004
SWITCH
1/4 RING COUNTER
0°
90°
180°
270°
PHASE ROTATION
SUB B. M
5. 06MHz B. P. F.
AMP
630KHz L. P. F.
REC AMP
630KHz B. P. F.
Q8009
AMP
VR8001
REC C
IC5001-13 REC/PLAY
3.2Vp-p (20msec./div.) COLOUR BAR
IC5001-12 REC/PLAY
3.2Vp-p (10msec./div.)
COLOUR BAR
FROM SYSTEM CTL
VIDEO OVL
VIDEO HEAD SW
VIDEO HEAD AMP SW
PB VIDEO VCC
REC Ⓗ/PB Ⓛ
CT SW GENE
H. SW
CT SW1
CT SW2
CT SW3
CT SW4
H. A. SW
Q3001
5V
QR3001
QR3016
PB 5V
IC8001-49 PLAY
0.4Vp-p (H•RATE) COLOUR BAR
VR1
VL1
VR2
VL2
Q5001
Q5001
Q5002
Q5002
TL5002
TL5001
F
S
D1
D1
D2
D2
D5
D6
D7
D8
D9
Q5009

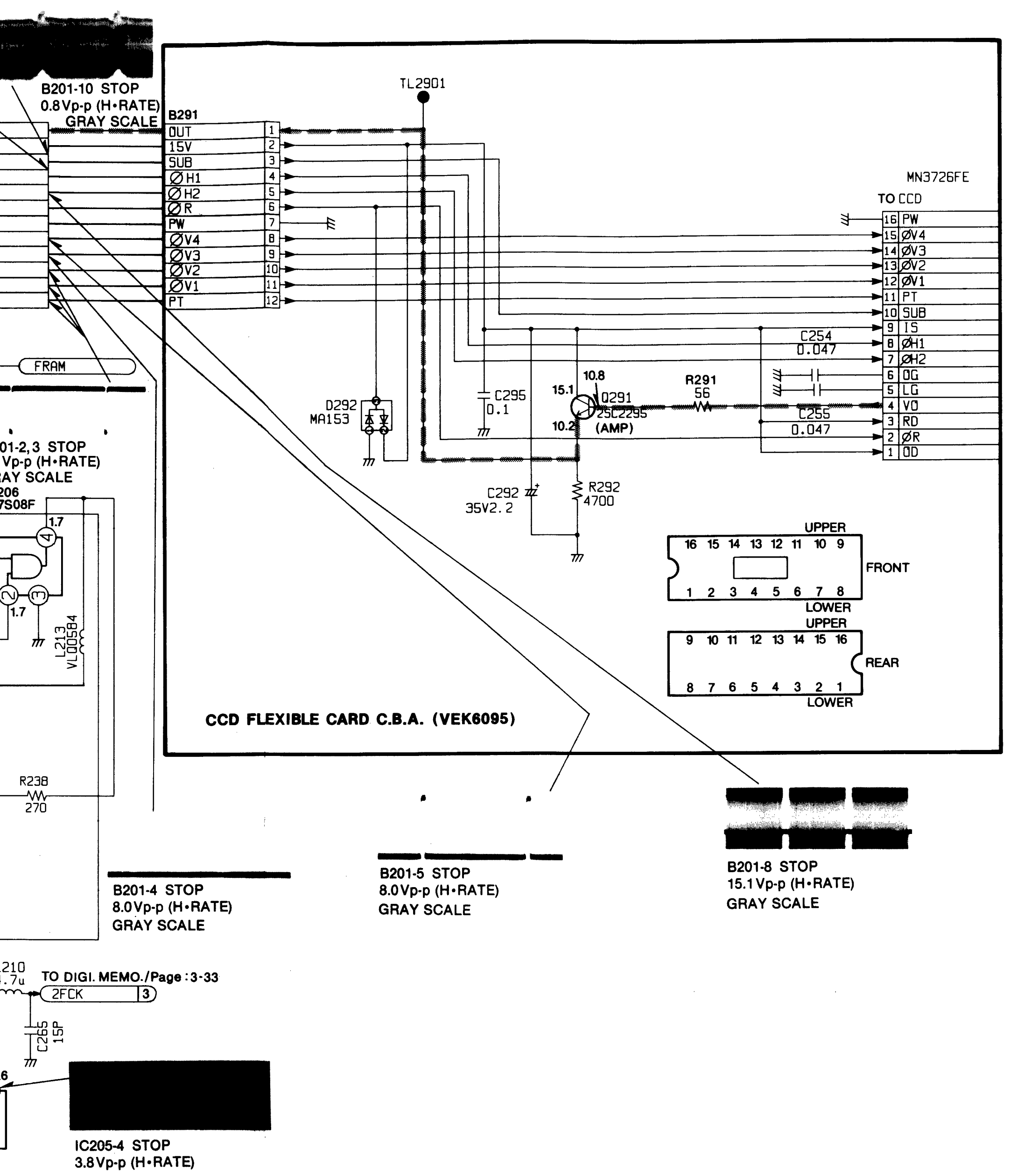
3-10. SENSOR SCHEMATIC DIAGRAM



VIDEO SIGNAL
(TO PROCESS/Page:3-42)
B202
SUB
FCK
DICLK
CAM18V
SUBCONT
CAM-8V
ADCLK
CP2
CAM3.5V
ADCONT
AGCOUT
PEDECONT
ADSTOAF
1.8V
3.3V
1.3V
OBCONT
AGCCONT
ADOUT
GND
CAM5V
CAM9V
VD
HD
CPOB
HCLK
VMD3
VMD2
VMD1
TO B301 (G-3)
TO DIGI. MEMO./Page:3-33
HD
CP2
IC202 LM358DB
IC201 VCR0362
IC201-27 STOP 4.0Vp-p (V·RATE)
IC201-26 STOP 3.6Vp-p (H·RATE)
IC201-15 STOP 5.6Vp-p (H·RATE)
IC204 AN2033FAP
IC204-21 STOP 0.6Vp-p (H·RATE) GRAY SCALE
IC204-7 STOP 1.5Vp-p (H·RATE) GRAY SCALE
IC204-29 STOP 0.6Vp-p (H·RATE) GRAY SCALE
Q202 XP4601 (BUFFER)
Q201 XP4601 (TRAP)
Q203 2SD2216 (AMP)
Q210 2SB1462 (REG.)
IC203 AN2013SB (CDS SAMPLING)
IC203-11 STOP 0.4Vp-p (H·RATE) GRAY SCALE
IC203-9 STOP 5.2Vp-p (H·RATE) GRAY SCALE
IC203-8 STOP 5.2Vp-p (H·RATE) GRAY SCALE
IC203-2 STOP 0.5Vp-p (H·RATE) GRAY SCALE
FL201 EL83H009
L216 VLQ0584
(NV-S6A, S600EN ONLY)
IC207 TC7S08F
FTZ C.B.A. (VEP22125A:NV-S6E/B)
IC206 TC7S08F
IC205 TC7S86F
IC205-4 STOP 3.8Vp-p (H·RATE)
B201-9 STOP 15.1Vp-p (H·RATE) GRAY SCALE
B201-10 STOP 0.8Vp-p (H·RATE) GRAY SCALE
B201-2,3 STOP 8.0Vp-p (H·RATE) GRAY SCALE
B201-4 STOP 8.0Vp-p (H·RATE) GRAY SCALE
B201-5 STOP 8.0Vp-p (H·RATE) GRAY SCALE
B201
B291
OUT
15V
SUB
ØH1
ØH2
ØR
PW
ØV4
ØV3
ØV2
ØV1
PT
FRAM
D292 MA153
TL2901
CCD FLEXIBLE CARD C.B.A.
TO DIGI. MEMO./Page:3-33
2FCK
D201 MA110
D202 MA110
D203 MA728
D204 MA110
TL201
CL205
E
D
C
B
A
1
2
3
4
5
6
7
8

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEA WITH AIM


B201-10 STOP
0.8Vp-p (H•RATE)
GRAY SCALE
B291
OUT
15V
SUB
ØH1
ØH2
ØR
PW
ØV4
ØV3
ØV2
ØV1
PT
TL2901
MN3726FE
TO CCD
PW
ØV4
ØV3
ØV2
ØV1
PT
SUB
IS
ØH1
ØH2
OG
LG
VD
RD
ØR
OD
C254
0.047
C255
0.047
R291
56
Q291
2SC2295
(AMP)
10.8
15.1
10.2
D292
MA153
C295
0.1
C292
35V2.2
R292
4700
FRAM
UPPER
FRONT
LOWER
UPPER
REAR
LOWER
CCD FLEXIBLE CARD C.B.A. (VEK6095)
01-2,3 STOP
Vp-p (H•RATE)
AY SCALE
206
7S08F
L213
VLQ0594
R238
270
B201-4 STOP
8.0Vp-p (H•RATE)
GRAY SCALE
B201-5 STOP
8.0Vp-p (H•RATE)
GRAY SCALE
B201-8 STOP
15.1Vp-p (H•RATE)
GRAY SCALE
210
.7u
TO DIGI. MEMO./Page:3-33
2FCK
C265
15P
IC205-4 STOP
3.8Vp-p (H•RATE)

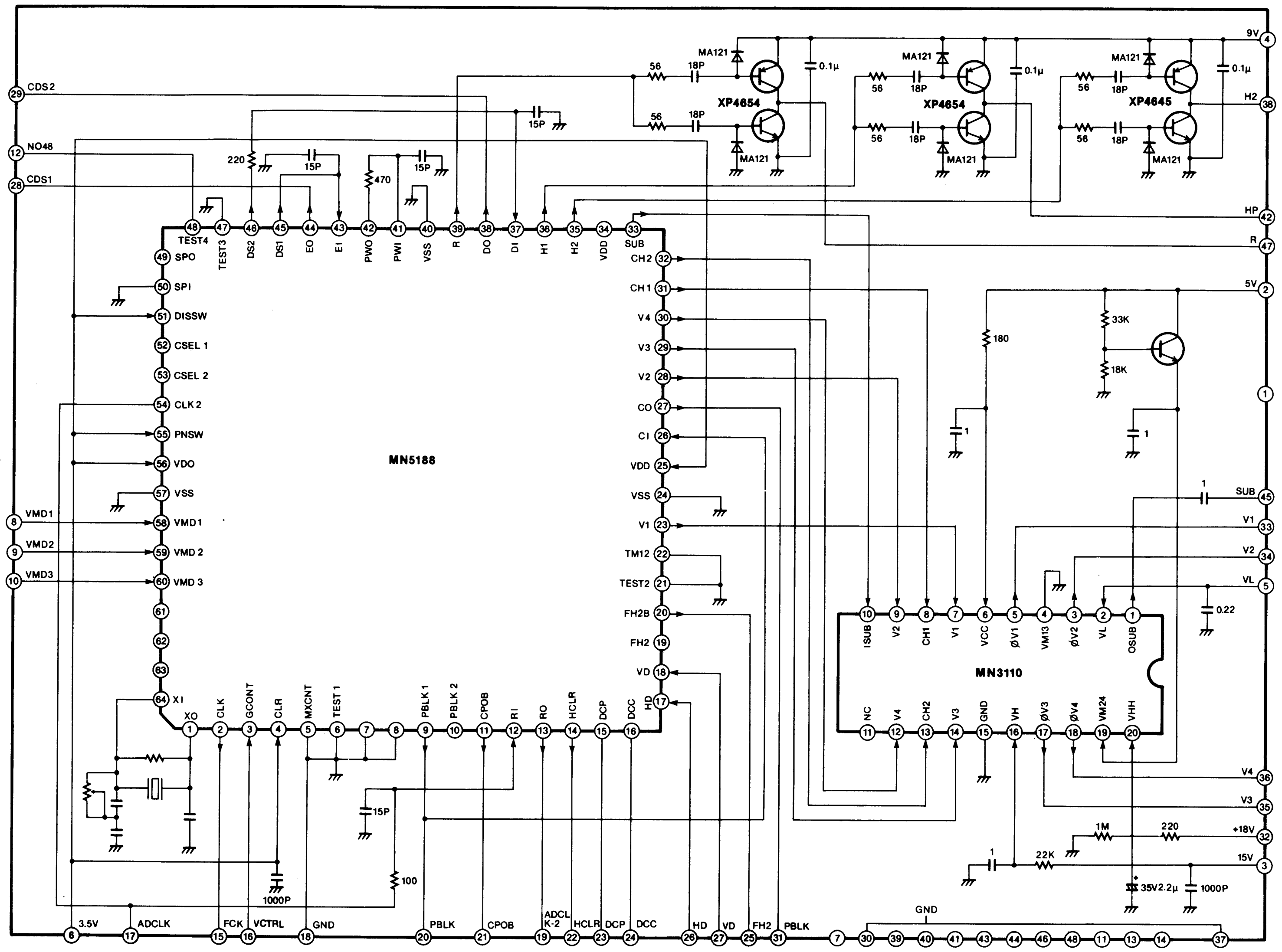
HOWN ON THIS SCHEMATIC DIAGRAM FOR
ART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

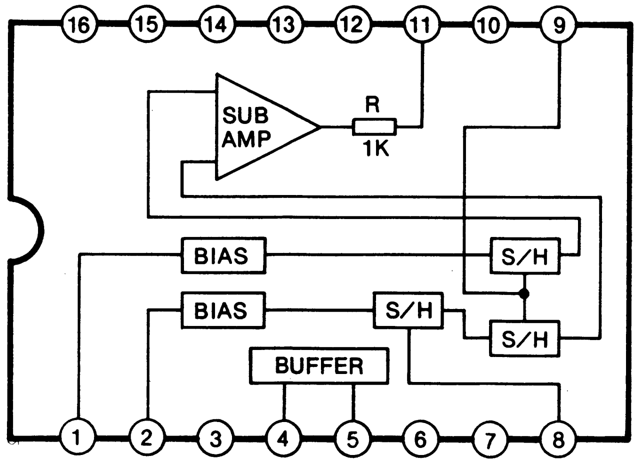
8 9 10

IC BLOCK

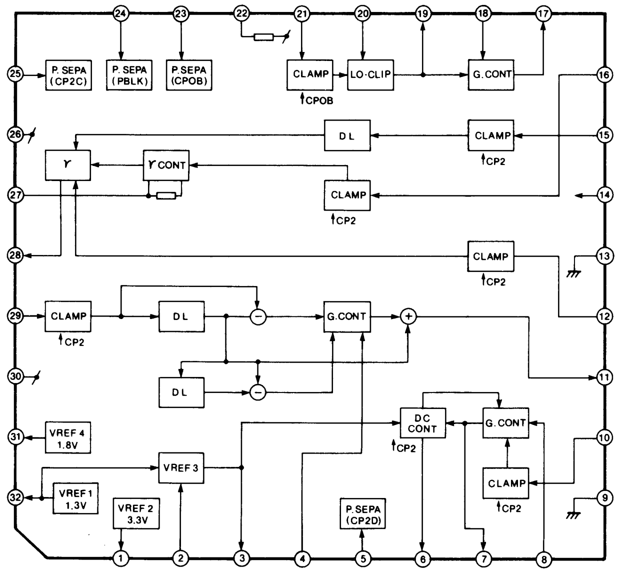
IC201 (VCR0362)


MN5188
MN3110
XP4654
XP4645
MA121
CDS2
NO48
CDS1
VMD1
VMD2
VMD3
9V
H2
HP
R
5V
SUB
V1
V2
VL
V4
V3
+18V
15V
3.5V
ADCLK
FCK
VCTRL
GND
PBLK
CPOB
ADCL K-2
HCLR
DCP
DCC
HD
VD
FH2
PBLK
GND

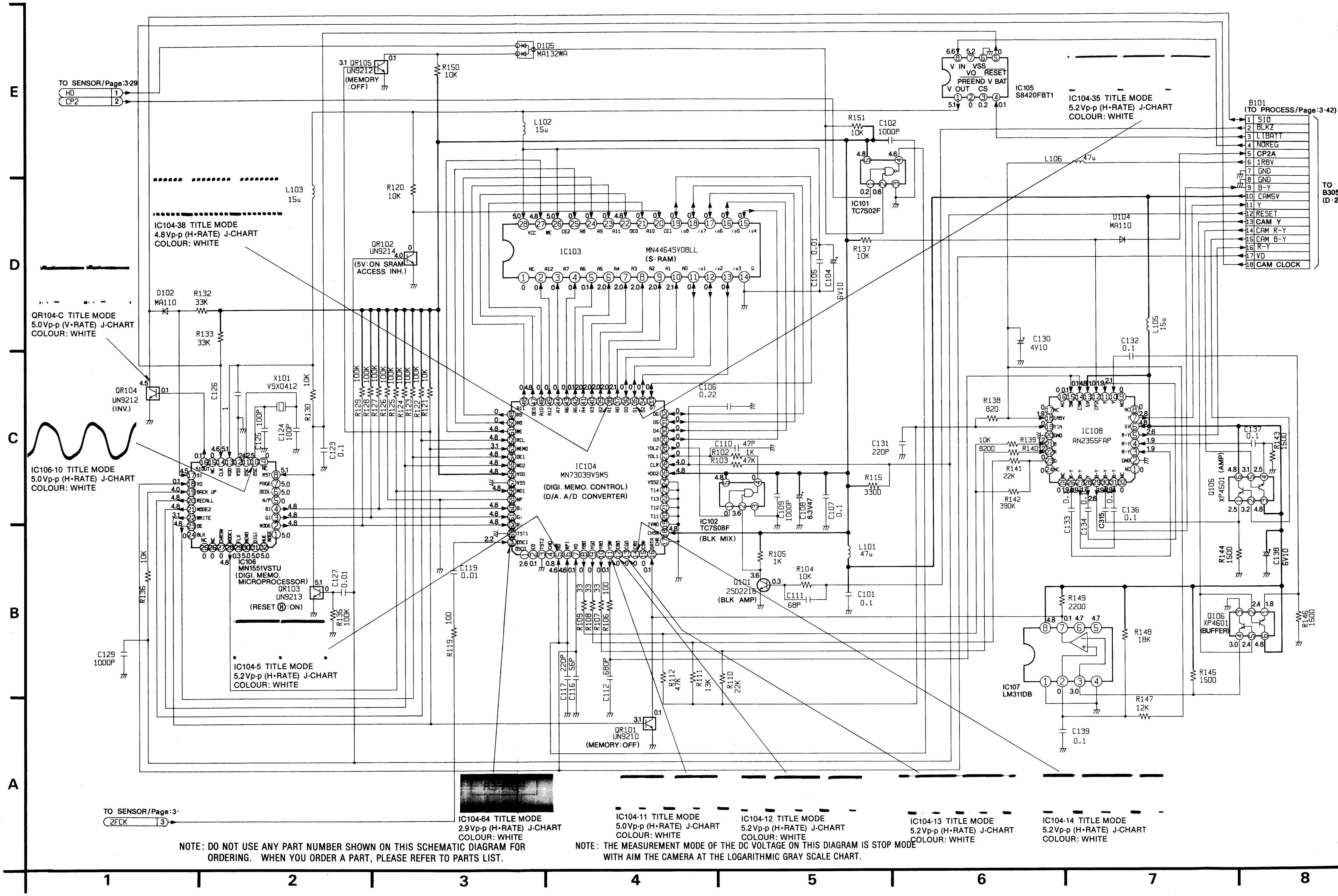
IC203 (AN2013SB)


SUB AMP
R
1K
BIAS
BIAS
S/H
S/H
S/H
BUFFER

IC204 (AN2033FAP)


P. SEPA (CP2C)
P. SEPA (PBLK)
P. SEPA (CPOB)
CLAMP
LO-CLIP
G. CONT
CPOB
DL
CLAMP
CP2
γ
γ CONT
CLAMP
CP2
CLAMP
CP2
CLAMP
CP2
DL
G. CONT
DL
DC CONT
CP2
G. CONT
VREF 4 1.8V
VREF 3
CLAMP
CP2
VREF 1 1.3V
VREF 2 3.3V
P. SEPA (CP2D)

3-11. DIGITAL MEMORY SCHEMATIC DIAGRAM


TO SENSOR/Page:3-29
HD 1
CP2 2
D105 MA132WA
QR105 UN9212 (MEMORY :OFF)
R150 10K
L102 15u
L103 15u
R120 10K
QR102 UN9214 (5V:ON SRAM ACCESS INH.)
IC103 MN4464SV08LL (S-RAM)
IC105 S8420FBT1
V IN VSS VO RESET PREEND V BAT V OUT CS
R151 10K
C102 1000P
IC101 TC7S02F
R137 10K
C105 0.01
C104 6V10
B101 (TO PROCESS/Page:3-42)
1 SIO
2 BLKZ
3 LIBATT
4 NOREG
5 CP2A
6 1R8V
7 GND
8 GND
9 B-Y
10 CAM5V
11 Y
12 RESET
13 CAM Y
14 CAM R-Y
15 CAM B-Y
16 R-Y
17 VD
18 CAM CLOCK
TO B305 (D-2
L106 47u
D104 MA110
D102 MA110
R132 33K
R133 33K
QR104 UN9212 (INV.)
X101 VSX0412
C126
C125 100P
C124 100P
R130 10K
C123 0.1
R129 R128 R127 R126 R125 R124 R123 R122 R121
IC106 MN1551VSTU (DIGI. MEMO. MICROPROCESSOR)
QR103 UN9213 (RESET Ⓗ:ON)
C127 0.01
R135 100K
R136 10K
C129 1000P
C119 0.01
R119 100
IC104 MN73039VSMS (DIGI. MEMO. CONTROL) (D/A. A/D CONVERTER)
C106 0.22
C110 47P
R102 1K
R103 47K
IC102 TC7S08F (BLK MIX)
C109 1000P
C108 6.3V47
C107 0.1
C131 220P
R115 3300
L101 47u
R105 1K
R104 10K
Q101 2SD2216 (BLK AMP)
C111 68P
C101 0.1
R109 R108 R107 R106
C117 220P
C116 56P
C112 680P
R112 47K
R111 13K
R110 22K
QR101 UN9210 (MEMORY:OFF)
C130 4V10
C132 0.1
L105 15u
R138 820
R139 10K
R140 8200
R141 22K
R142 390K
IC108 AN2355FAP
C133 0.1
C134
C135
C136 0.1
C137 0.1
R143 1500
Q105 XP4501 (AMP)
R144 1500
C138 6V10
R149 2200
IC107 LM311DB
R148 18K
R145 1500
R147 12K
C139 0.1
Q106 XP4601 (BUFFER)
R146 1500
TO SENSOR/Page:3-
2FCK 3
E
D
C
B
A
1
2
3
4
5
6
7
8

IC104-38 TITLE MODE
4.8Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-35 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE

QR104-C TITLE MODE
5.0Vp-p (V•RATE) J-CHART
COLOUR: WHITE

IC106-10 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-5 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-64 TITLE MODE
2.9Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-11 TITLE MODE
5.0Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-12 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE

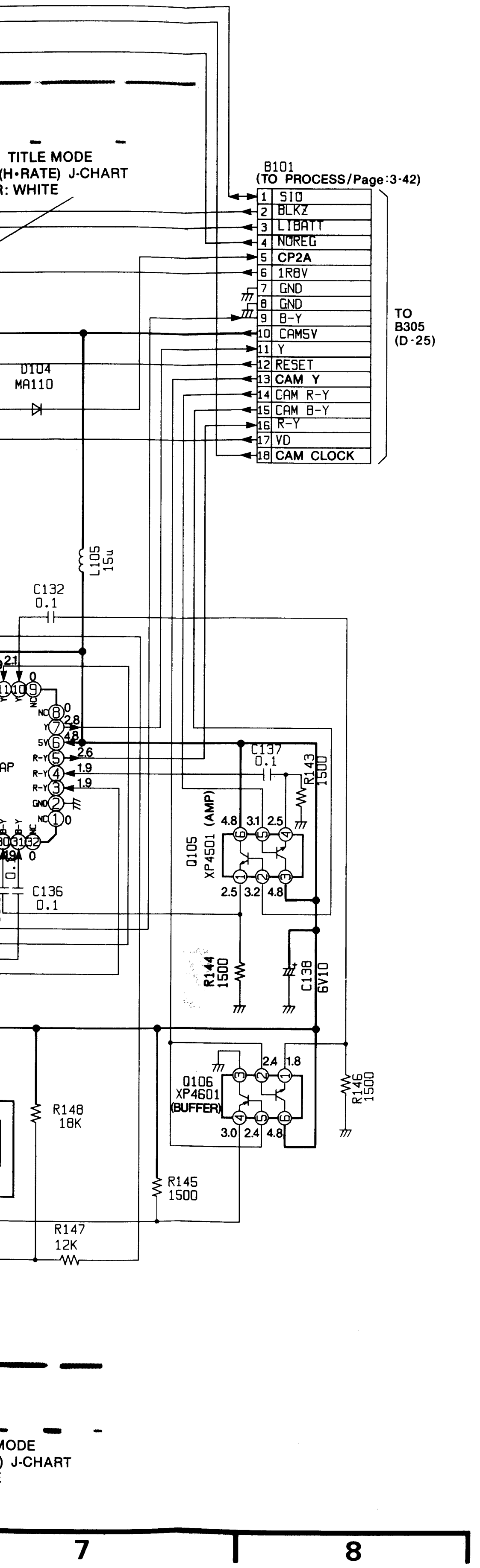
IC104-13 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE

IC104-14 TITLE MODE
5.2Vp-p (H•RATE) J-CHART
COLOUR: WHITE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

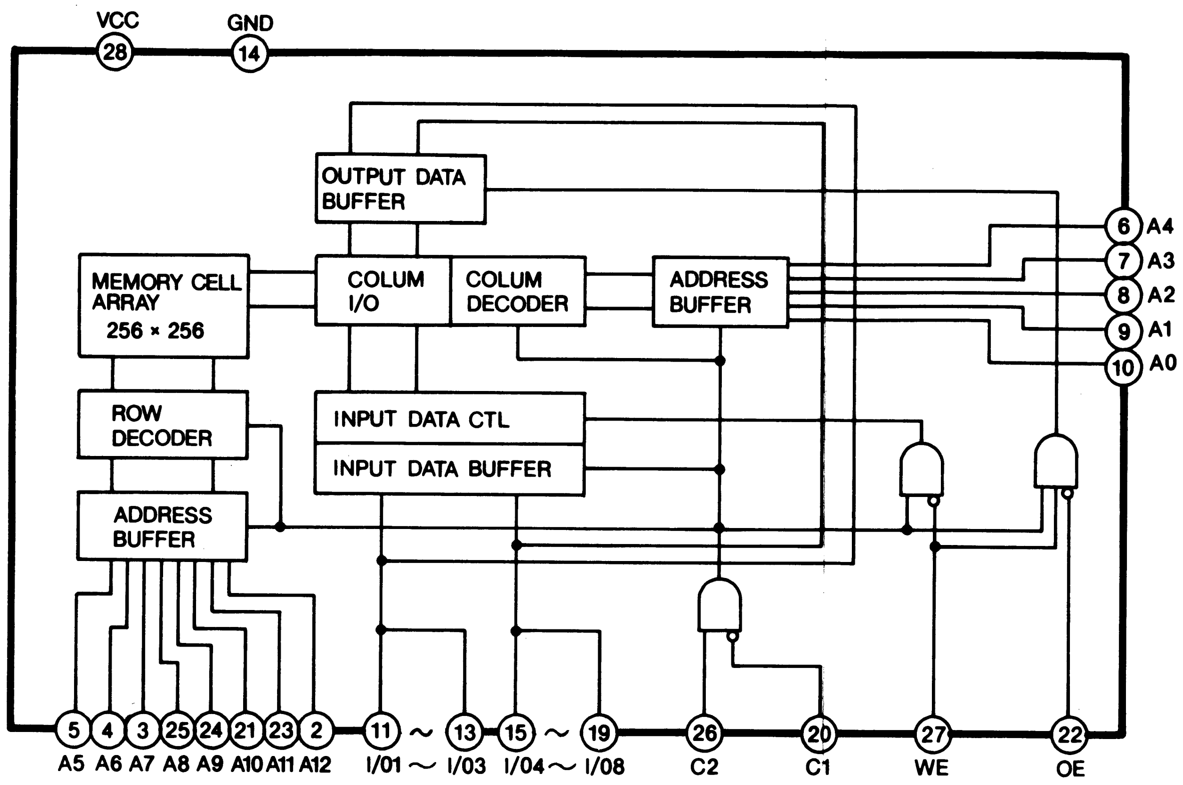
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

Back Page:
SENSOR Section

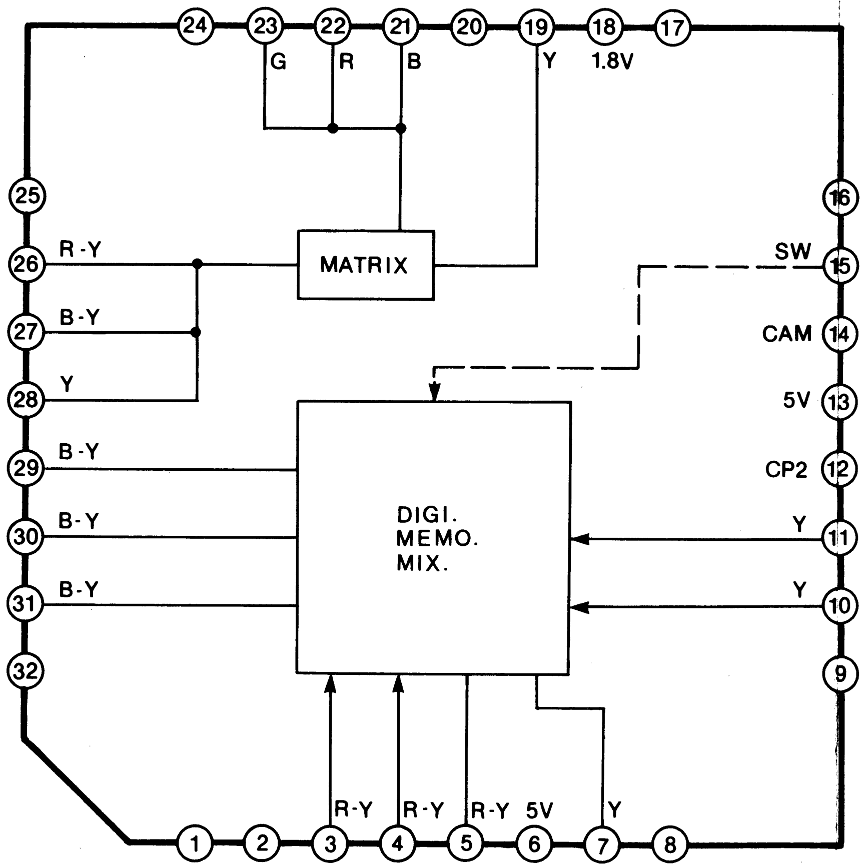

TITLE MODE
(H•RATE) J-CHART
R: WHITE
B101
(TO PROCESS/Page:3-42)
1 SIO
2 BLKZ
3 LIBATT
4 NOREG
5 CP2A
6 1R8V
7 GND
8 GND
9 B-Y
10 CAM5V
11 Y
12 RESET
13 CAM Y
14 CAM R-Y
15 CAM B-Y
16 R-Y
17 VD
18 CAM CLOCK
TO
B305
(D-25)
D104
MA110
L105
15u
C132
0.1
C136
0.1
C137
0.1
R143
1500
Q105
XP4501 (AMP)
4.8
3.1
2.5
3.2
R144
1500
C138
6V10
Q106
XP4601
(BUFFER)
2.4
1.8
3.0
R146
1500
R148
18K
R145
1500
R147
12K
MODE
) J-CHART
7
8

IC BLOCK

IC103 (MN4464S)


VCC
GND
OUTPUT DATA BUFFER
MEMORY CELL ARRAY 256 × 256
COLUM I/O
COLUM DECODER
ADDRESS BUFFER
ROW DECODER
INPUT DATA CTL
INPUT DATA BUFFER
ADDRESS BUFFER
A4
A3
A2
A1
A0
A5 A6 A7 A8 A9 A10 A11 A12
I/01 ~ I/03
I/04 ~ I/08
C2
C1
WE
OE

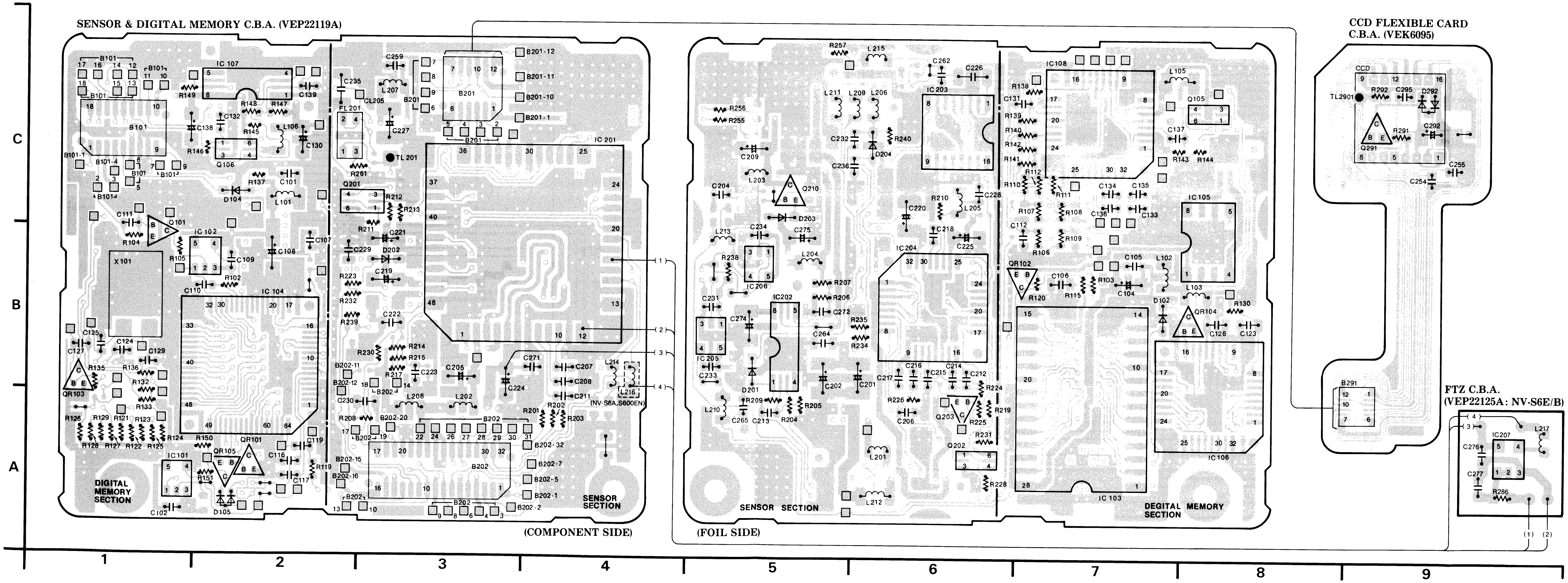
IC108 (AN2355FAP)


G
R
B
Y
1.8V
R-Y
B-Y
Y
MATRIX
SW
CAM
5V
CP2
B-Y
B-Y
B-Y
DIGI. MEMO. MIX.
Y
Y
R-Y
R-Y
R-Y
5V
Y

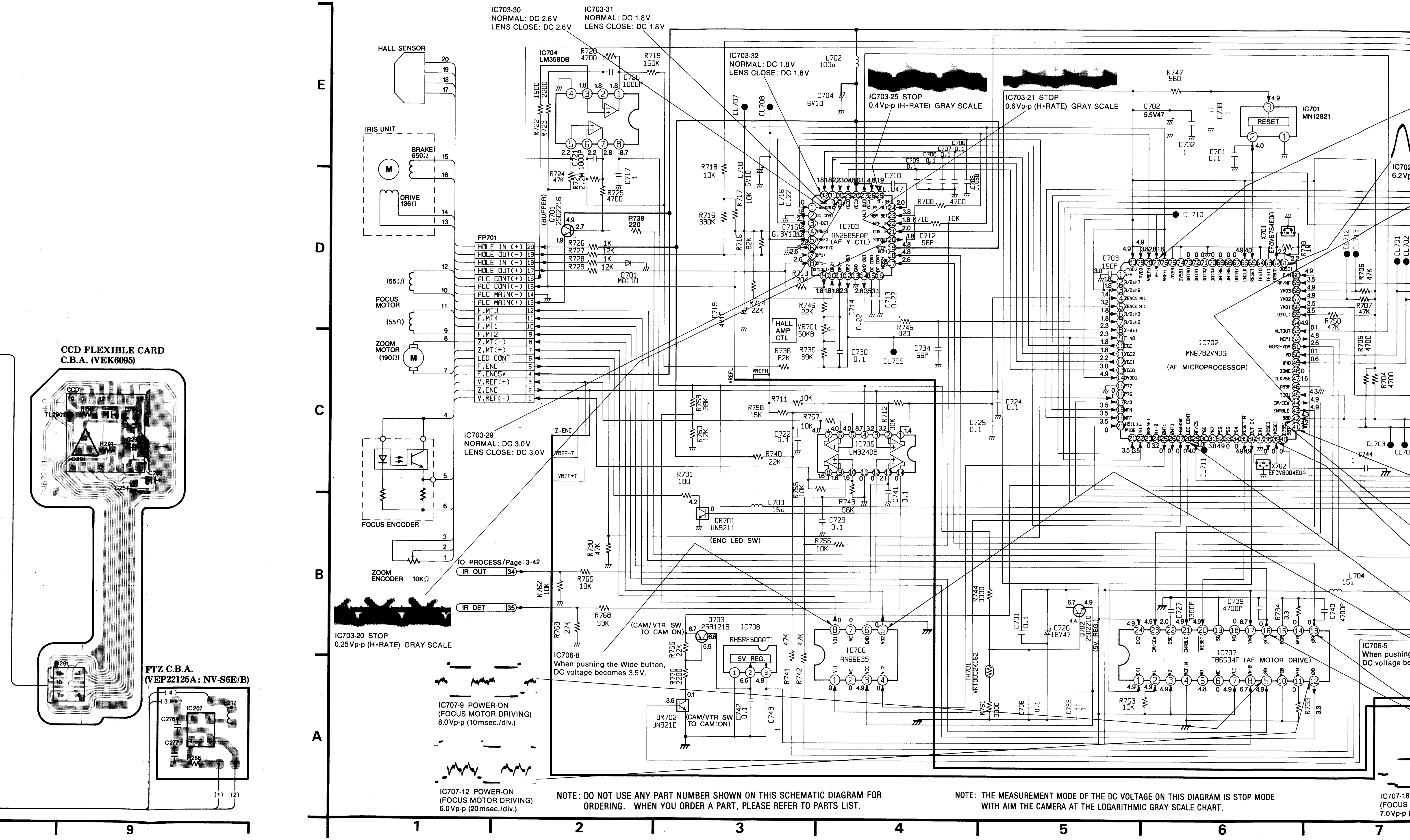
SENSOR & DIGITAL MEMORY C.B.A	
Integrated Circuit	
IC101	A-1
IC102	B-2
IC103	B-7
IC104	B-2
IC105	C-8
IC106	B-8
IC107	C-2
IC108	C-7
IC201	C-3
IC202	B-5
IC203	C-6
IC204	B-6
IC205	B-5
IC206	B-5
Transistor	
Q101	C-1
Q105	C-8
Q106	C-2
Q201	C-3
Q202	A-6
Q203	A-6
Q210	C-5
Q291	C-9
Transistor & Resistor	
QR101	A-2
QR102	B-7
QR103	B-1
QR104	B-8
QR105	A-2
Diode	
D102	B-7
D104	C-2
D105	A-2
D201	B-5
D202	B-3
D203	C-5
D204	C-6
Test Point	
CL205	C-3
TL201	C-3
TL2901	C-9
Connector	
B101	C-1
B201	C-3
B202	A-3
B291	A-9
Crystal Oscillator	
X101	B-1
Filter	
FL201	C-3
Coil	
L101	C-2
L102	B-7
L103	B-8
L105	C-8
L106	C-2
L201	A-6
L202	B-3
L203	C-5
L204	B-5
L205	C-6
L206	C-6
L207	C-3
L208	B-3
L209	C-6
L210	A-5
L211	C-5
L212	A-6
L213	B-5
L214	B-4
L215	C-6
L216	B-4
Capacitor	
C101	C-2
C102	A-1
C104	B-7
C105	B-7
C106	B-7
C107	B-2
C108	B-2
C109	B-2
C110	B-2
C111	C-1
C112	B-7
C116	A-2
C117	A-2
C119	A-2
C123	B-8
C124	B-1
C125	B-1
C126	B-8
C127	B-1
C129	B-1
C130	C-2
C131	C-7
C132	C-2
C133	C-7
C134	C-7
C135	C-7
C136	C-7
C137	C-7
C138	C-1
C139	C-2
C201	B-6
C202	B-5
C204	C-5
C205	B-3
C206	A-6
C207	B-4
C208	B-4
C209	C-5
C211	B-4
C212	B-6
C213	A-5
C214	B-6
C215	B-6
C216	B-6
C217	B-6
C218	B-6
C219	B-3
C220	C-6
C221	C-3
C222	B-3
C223	B-3
C224	B-3
C225	C-6
C226	C-6
C227	C-3
C228	C-6
C229	B-2
C230	B-3
C231	B-5
C232	C-6
C233	B-5
C234	B-5
C235	C-2
C236	C-6
C259	C-3
C262	C-6
C264	B-5
C265	A-5
C271	B-4
C272	B-5
C274	B-5
C275	B-5
Resistor	
R102	B-2
R103	B-7
R104	B-1
R105	B-1
R106	B-7
R107	C-7
R108	C-7
R109	B-7
R110	C-7
R111	C-7
R112	C-7
R115	B-7
R119	A-2
R120	B-7
R121	A-1
R122	A-1
R123	A-1
R124	A-1
R125	A-1
R126	A-1
R127	A-1
R128	A-1
R129	A-1
R130	B-8
R132	B-1
R133	B-1
R135	B-1
R136	B-1
R137	C-2
R138	C-7
R139	C-7
R140	C-7
R141	C-7
R142	C-7
R143	C-8
R144	C-8
R145	C-2
R146	C-2
R147	C-2
R148	C-2
R149	C-2
R150	A-2
R151	A-2
R201	A-4
R202	A-4
R203	A-4
R204	A-5
R205	A-5
R206	B-5
R207	B-5
R208	A-3
R209	A-5
R210	C-6
R211	C-3
R212	C-3
R213	C-3
R214	B-3
R215	B-3
R217	B-3
R219	A-6
R223	B-3
R224	B-6
R225	A-6
R226	A-6
R228	A-6
R230	B-3
R231	A-6
R232	B-3
R234	B-6
R235	B-6
R238	B-5
R239	B-3
R240	C-6
R255	C-5
R256	C-5
R257	C-5
R261	C-3

ADDRESS INFORMATION

3-12. SENSOR & DIGITAL MEMORY C.B.A. (VEP22119A)


SENSOR & DIGITAL MEMORY C.B.A. (VEP22119A)
CCD FLEXIBLE CARD C.B.A. (VEK6095)
FTZ C.B.A. (VEP22125A: NV-S6E/B)
DIGITAL MEMORY SECTION
SENSOR SECTION
(COMPONENT SIDE)
(FOIL SIDE)
SENSOR SECTION
DEGITAL MEMORY SECTION
IC 107
IC 102
IC 104
IC 101
IC 201
IC 202
IC 203
IC 204
IC 205
IC 206
IC 108
IC 105
IC 106
IC 103
IC 207
B101
B201
B202
B291
X101
Q101
Q106
QR101
QR103
QR105
Q201
Q202
Q203
Q210
QR102
QR104
Q105
Q291
TL201
TL2901
CCD
(NV-S6A,S600EN)
C
B
A
1
2
3
4
5
6
7
8
9

3-13. AUTO FOCUS SCHEMATIC DIAGRAM



CCD FLEXIBLE CARD
C.B.A. (VEK6095)
FTZ C.B.A.
(VEP22125A : NV-S6E/B)
HALL SENSOR
IRIS UNIT
BRAKE 650Ω
DRIVE 136Ω
FOCUS MOTOR
(55Ω)
ZOOM MOTOR (190Ω)
FOCUS ENCODER
ZOOM ENCODER 10KΩ
FP701
HOLE IN (+)
HOLE OUT(-)
HOLE IN (-)
HOLE OUT(+)
ALC CONT(+)
ALC CONT(-)
ALC MAIN(-)
ALC MAIN(+)
F.MT3
F.MT4
F.MT1
F.MT2
Z.MT(-)
Z.MT(+)
LED CONT
F.ENC
F.ENC5V
V.REF(+)
Z.ENC
V.REF(-)
IC704 LM358DB
Q701 2SD2216 (BUFFER)
D701 MA110
IC703 AN2585FAP (AF Y CTL)
HALL AMP CTL
VR701 50KB
IC705 LM324DB
QR701 UN9211 (ENC LED SW)
IC701 MN12821
RESET
IC702 MN6782VMDG (AF MICROPROCESSOR)
X701 EFOV6754E0A
X702 EFOV8004E0A
TO PROCESS/Page 3-42
IR OUT
IR DET
Q703 2SB1219 (CAM/VTR SW TO CAM:ON)
QR702 UN921E (CAM/VTR SW TO CAM:ON)
IC708 RH5RE50AAT1
5V REG.
IC706 AN6663S
TH701 VRT0032K152
Q702 2SD2210 (5V REG.)
IC707 TB6504F (AF MOTOR DRIVE)

IC703-30
NORMAL: DC 2.6V
LENS CLOSE: DC 2.6V

IC703-31
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V

IC703-32
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V

IC703-25 STOP
0.4Vp-p (H·RATE) GRAY SCALE

IC703-21 STOP
0.6Vp-p (H·RATE) GRAY SCALE

IC703-29
NORMAL: DC 3.0V
LENS CLOSE: DC 3.0V

IC703-20 STOP
0.25Vp-p (H·RATE) GRAY SCALE

IC707-9 POWER-ON
(FOCUS MOTOR DRIVING)
8.0Vp-p (10msec./div.)

IC707-12 POWER-ON
(FOCUS MOTOR DRIVING)
6.0Vp-p (20msec./div.)

IC706-8
When pushing the Wide button,
DC voltage becomes 3.5V.

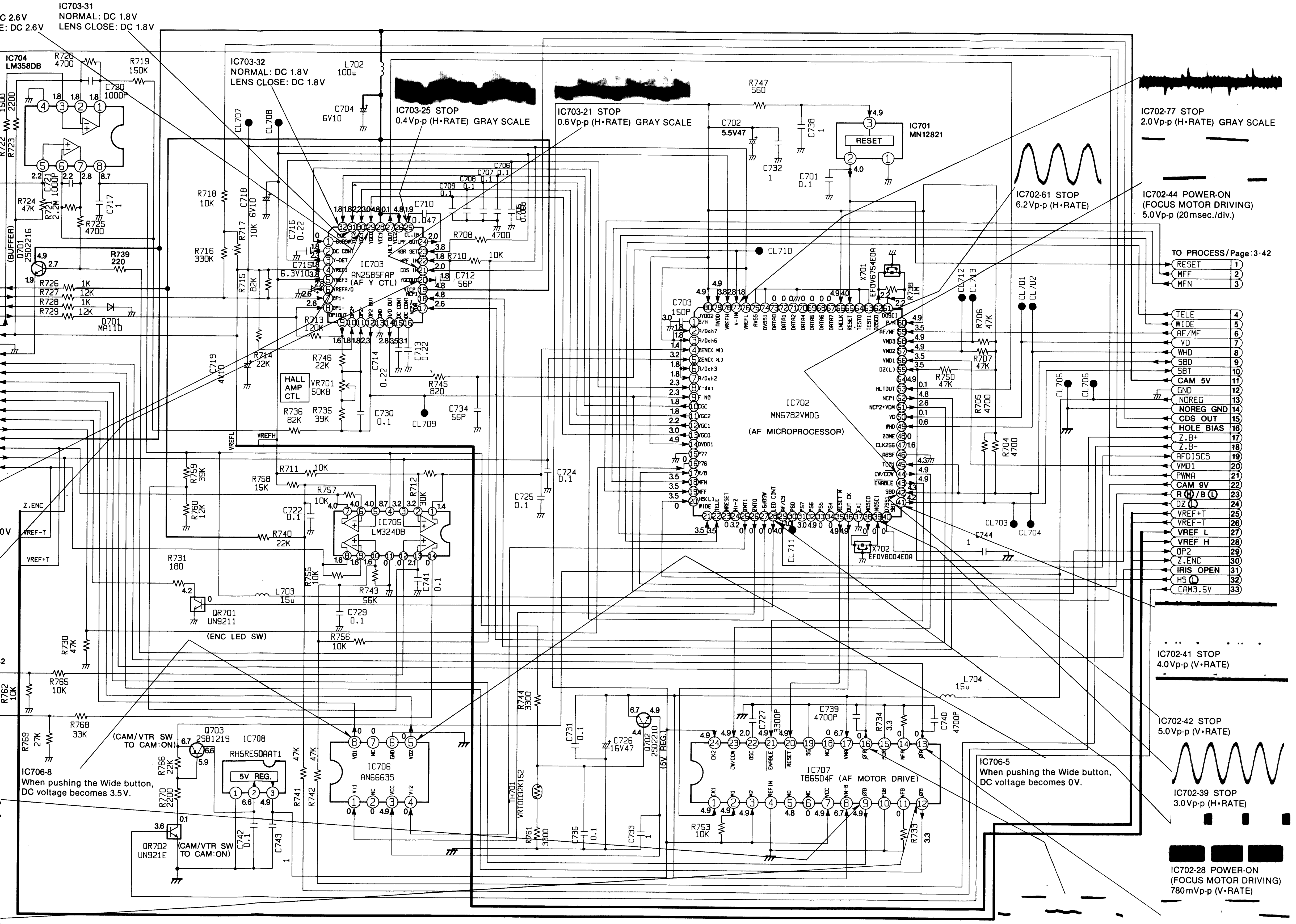
IC706-5
When pushing
DC voltage be

IC707-16
(FOCUS
7.0Vp-p (

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

MATIC DIAGRAM


IC703-31
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V
C 2.6V
E: DC 2.6V
IC703-32
NORMAL: DC 1.8V
LENS CLOSE: DC 1.8V
IC703-25 STOP
0.4Vp-p (H•RATE) GRAY SCALE
IC703-21 STOP
0.6Vp-p (H•RATE) GRAY SCALE
IC702-77 STOP
2.0Vp-p (H•RATE) GRAY SCALE
IC702-61 STOP
6.2Vp-p (H•RATE)
IC702-44 POWER-ON
(FOCUS MOTOR DRIVING)
5.0Vp-p (20msec./div.)
IC704
LM358DB
IC703
AN2585FAP
(AF Y CTL)
IC701
MN12821
RESET
IC702
MN6782VMDG
(AF MICROPROCESSOR)
IC705
LM324DB
HALL AMP CTL
VR701 50KB
Q701 2SD2216 (BUFFER)
D701 MA110
QR701 UN9211
(ENC LED SW)
X701 EFOV6754E0A
X702 EFOV8004E0A
TO PROCESS/Page:3-42
RESET 1
MFF 2
MFN 3
TELE 4
WIDE 5
AF/MF 6
VD 7
WHD 8
SBD 9
SBT 10
CAM 5V 11
GND 12
NOREG 13
NOREG GND 14
CDS OUT 15
HOLE BIAS 16
Z.B+ 17
Z.B- 18
AFDISCS 19
VMD1 20
PWMA 21
CAM 9V 22
R Ⓗ/B Ⓛ 23
DZ Ⓛ 24
VREF+T 25
VREF-T 26
VREF L 27
VREF H 28
OP2 29
Z.ENC 30
IRIS OPEN 31
HS Ⓛ 32
CAM3.5V 33
IC702-41 STOP
4.0Vp-p (V•RATE)
IC702-42 STOP
5.0Vp-p (V•RATE)
IC702-39 STOP
3.0Vp-p (H•RATE)
IC702-28 POWER-ON
(FOCUS MOTOR DRIVING)
780mVp-p (V•RATE)
Q703 2SB1219
IC708
RH5RE50AAT1
5V REG.
(CAM/VTR SW TO CAM:ON)
QR702 UN921E
IC706-8
When pushing the Wide button,
DC voltage becomes 3.5V.
IC706
AN6663S
Q702 2SD2210 (5V REG.)
TH701 VRT0032K152
IC707
TB6504F (AF MOTOR DRIVE)
IC706-5
When pushing the Wide button,
DC voltage becomes 0V.
IC707-16 POWER-ON
(FOCUS MOTOR DRIVING)
7.0Vp-p (20msec./div.)
IC707-13 POWER-ON
(FOCUS MOTOR DRIVING)
6.0Vp-p (20msec./div.)

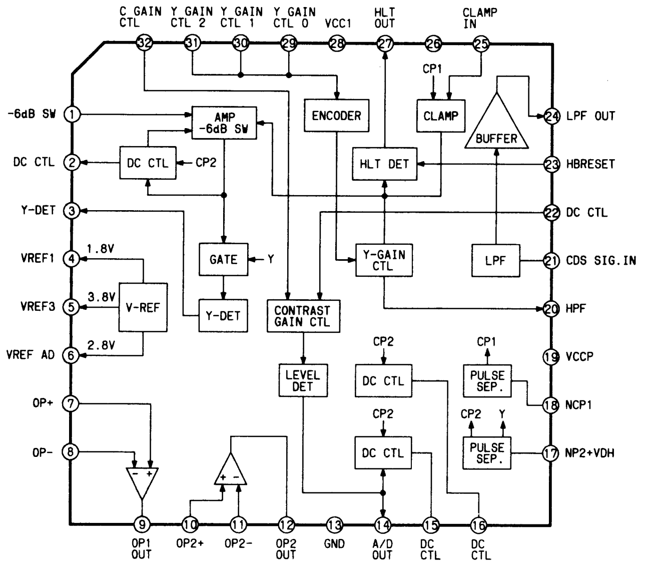
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

2	3	4	5	6	7	8

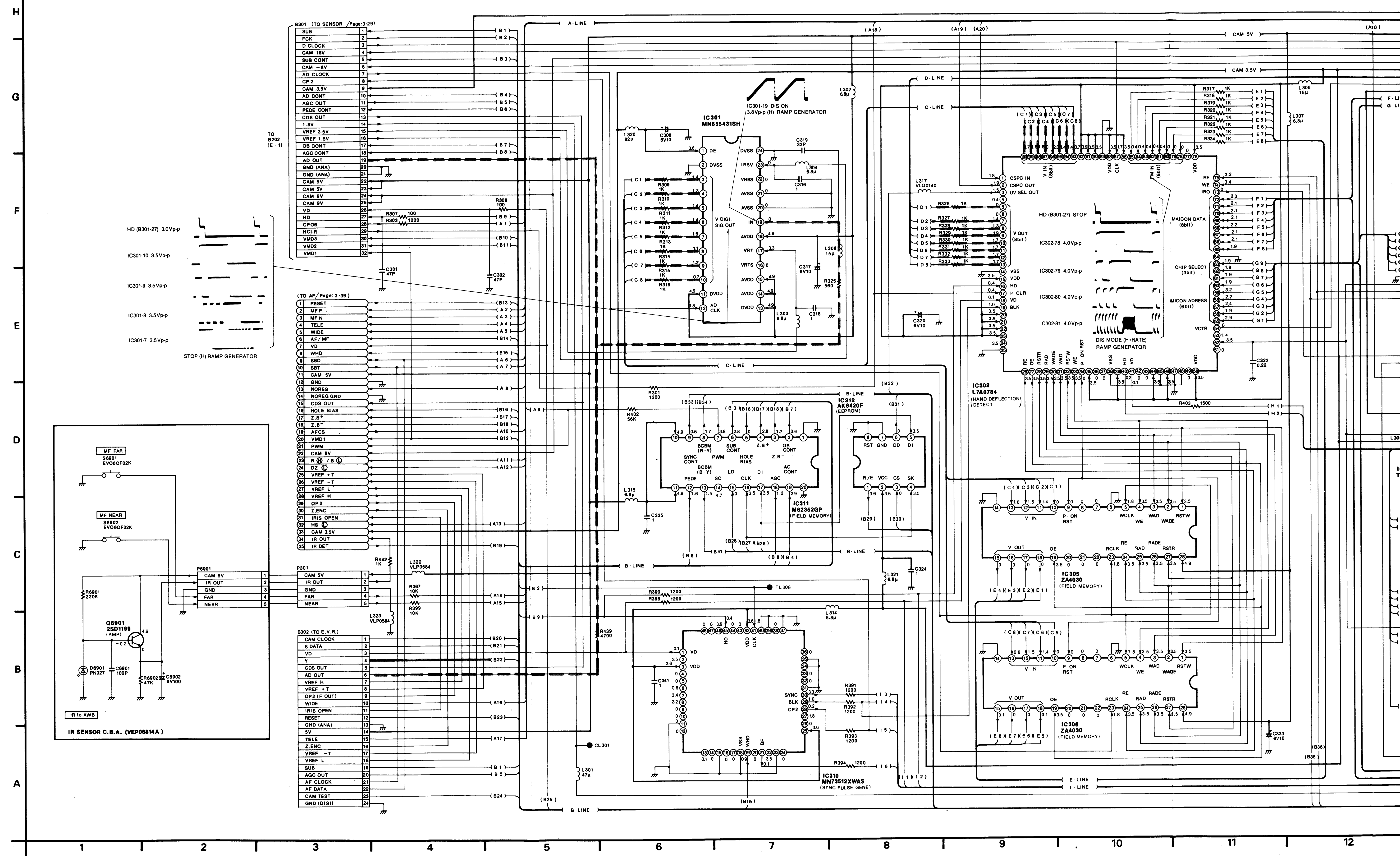
IC BLOCK

IC703 (AN2585FAP)


C GAIN CTL
Y GAIN CTL 2
Y GAIN CTL 1
Y GAIN CTL 0
VCC1
HLT OUT
CLAMP IN
-6dB SW
DC CTL
Y-DET
VREF1
VREF3
VREF AD
OP+
OP-
AMP -6dB SW
ENCODER
CLAMP
BUFFER
CP1
CP2
HLT DET
GATE
Y-GAIN CTL
LPF
V-REF
CONTRAST GAIN CTL
LEVEL DET
DC CTL
PULSE SEP.
1.8V
3.8V
2.8V
LPF OUT
HBRESET
DC CTL
CDS SIG.IN
HPF
VCCP
NCP1
NP2+VDH
OP1 OUT
OP2+
OP2-
OP2 OUT
GND
A/D OUT
DC CTL
DC CTL

3-14. PROCESS SCHEMATIC DIAGRAM

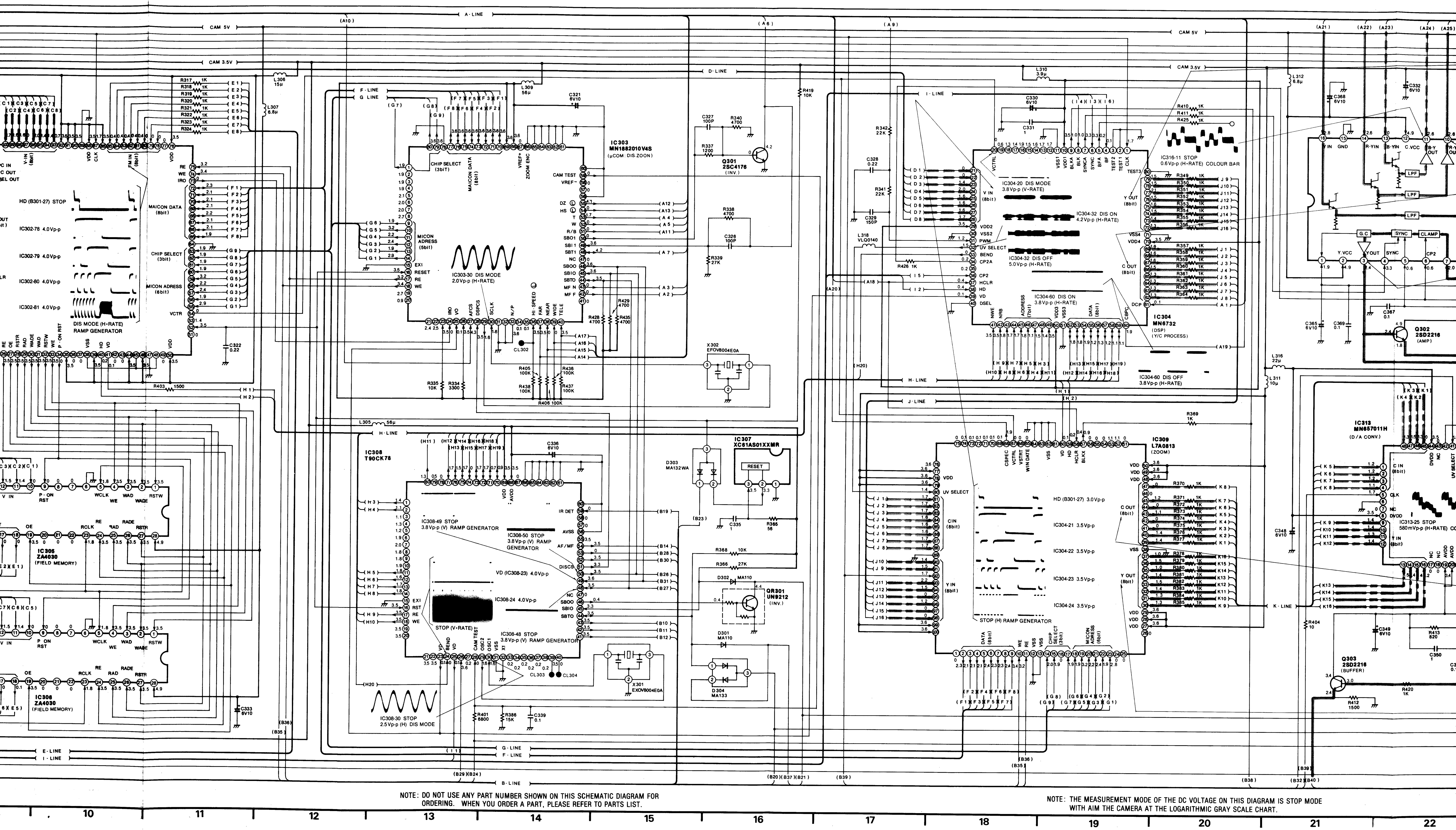
VIDEO SIGNAL DIGITAL Y SIGNAL DIGITAL C


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
B301 (TO SENSOR /Page:3-29)
TO B202 (E-1)
(TO AF/Page:3-39)
IC301 MN65543ISH
IC301-19 DIS ON 3.8Vp-p (H) RAMP GENERATOR
HD (B301-27) 3.0Vp-p
IC301-10 3.5Vp-p
IC301-9 3.5Vp-p
IC301-8 3.5Vp-p
IC301-7 3.5Vp-p
STOP (H) RAMP GENERATOR
IC302 L7A0784 (HAND DEFLECTION DETECT)
DIS MODE (H-RATE) RAMP GENERATOR
MAICON DATA (8bit)
CHIP SELECT (3bit)
MICON ADRESS (6bit)
IC311 M62352GP (FIELD MEMORY)
IC312 AK6420F (EEPROM)
IC305 ZA4030 (FIELD MEMORY)
IC306 ZA4030 (FIELD MEMORY)
IC310 MN73512XWAS (SYNC PULSE GENE)
IR SENSOR C.B.A. (VEP06814A)
MF FAR S6901 EVQ6QF02K
MF NEAR S6902 EVQ6QF02K
Q6901 2SD1199 (AMP)
D6901 PN327
IR to AWB
P6901
P301
B302 (TO E.V.R.)
A-LINE
B-LINE
C-LINE
D-LINE
E-LINE
I-LINE
CAM 5V
CAM 3.5V
TL308
CL301

Back Page:
SENSOR & DIGI. MEMO. C.B.A. Section

PROCESS Section

DIGITAL Y SIGNAL DIGITAL C SIGNAL Y SIGNAL R-Y SIGNAL B-Y SIGNAL

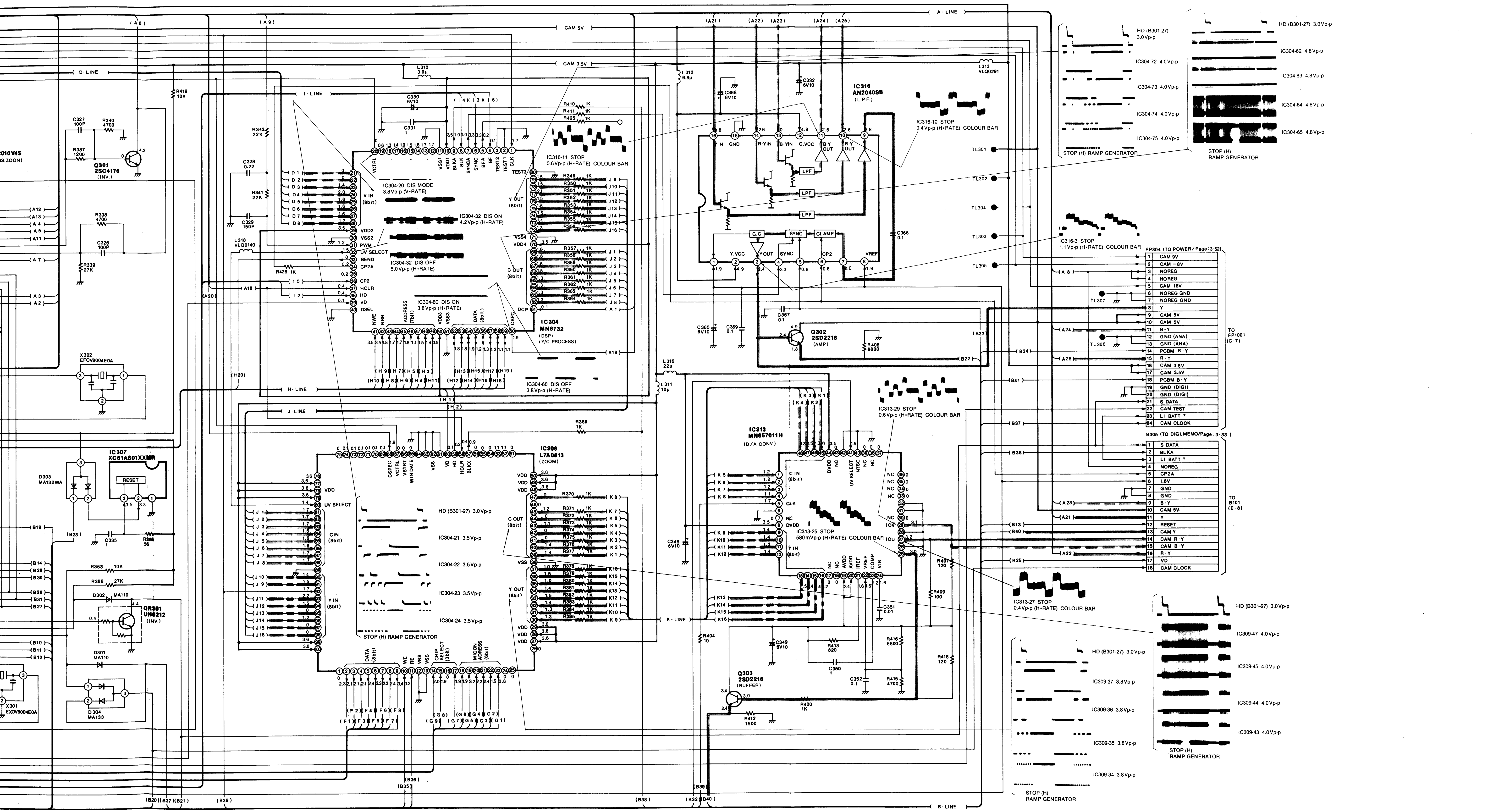

A-LINE
CAM 5V
CAM 3.5V
D-LINE
I-LINE
F-LINE
G-LINE
H-LINE
J-LINE
K-LINE
E-LINE
B-LINE
IC303
MN1882010V4S
(μCOM: DIS ZOON)
IC303-30 DIS MODE 2.0Vp-p (H-RATE)
Q301
2SC4176
(INV.)
X302
EFOV8004E0A
IC304
MN6732
(DSP)
(Y/C PROCESS)
IC304-20 DIS MODE 3.8Vp-p (V-RATE)
IC304-32 DIS ON 4.2Vp-p (H-RATE)
IC304-32 DIS OFF 5.0Vp-p (H-RATE)
IC304-60 DIS ON 3.8Vp-p (H-RATE)
IC304-60 DIS OFF 3.8Vp-p (H-RATE)
IC316-11 STOP 0.6Vp-p (H-RATE) COLOUR BAR
Q302
2SD2216
(AMP)
IC305
ZA4030
(FIELD MEMORY)
IC306
ZA4030
(FIELD MEMORY)
HD (B301-27) STOP
IC302-78 4.0Vp-p
IC302-79 4.0Vp-p
IC302-80 4.0Vp-p
IC302-81 4.0Vp-p
DIS MODE (H-RATE) RAMP GENERATOR
IC308
T90CK78
IC308-49 STOP 3.8Vp-p (V) RAMP GENERATOR
IC308-50 STOP 3.8Vp-p (V) RAMP GENERATOR
VD (IC308-23) 4.0Vp-p
IC308-24 4.0Vp-p
STOP (V-RATE)
IC308-48 STOP 3.8Vp-p (V) RAMP GENERATOR
IC308-30 STOP 2.5Vp-p (H) DIS MODE
X301
EXOV8004E0A
IC307
XC61AS01XXMR
RESET
D303
MA132WA
D302 MA110
QR301
UN9212
(INV.)
D301
MA110
D304
MA133
IC309
L7A0813
(ZOOM)
HD (B301-27) 3.0Vp-p
IC304-21 3.5Vp-p
IC304-22 3.5Vp-p
IC304-23 3.5Vp-p
IC304-24 3.5Vp-p
STOP (H) RAMP GENERATOR
IC313
MN657011H
(D/A CONV.)
IC313-25 STOP 580mVp-p (H-RATE)
Q303
2SD2216
(BUFFER)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

10 11 12 13 14 15 16 17 18 19 20 21 22

R-Y SIGNAL   B-Y SIGNAL

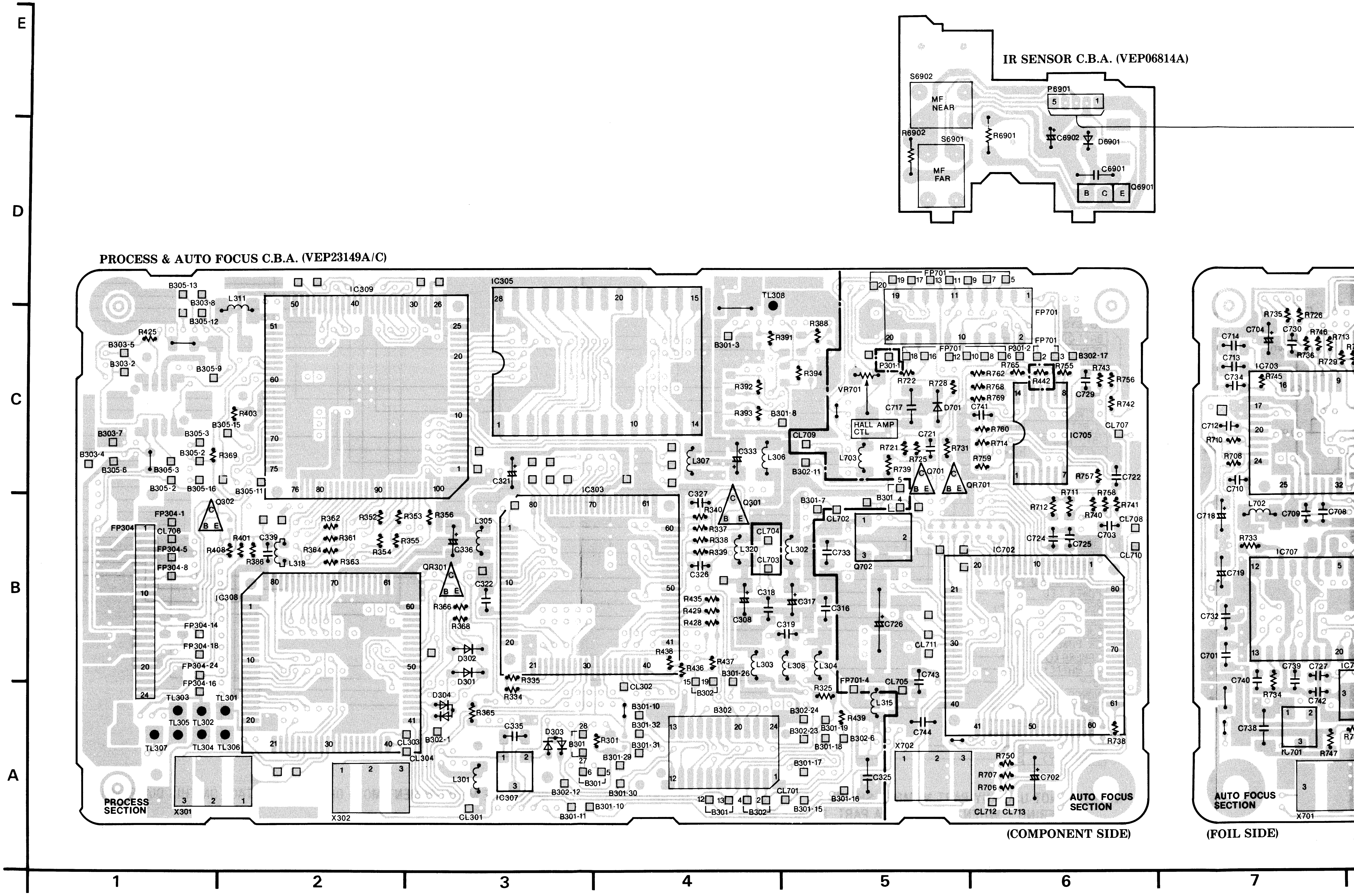

A-LINE
B-LINE
D-LINE
I-LINE
H-LINE
J-LINE
K-LINE
CAM 5V
CAM 3.5V
Q301
2SC4176
(INV.)
X302
EFOV8004E0A
IC307
XC61AS01XXMR
RESET
D303
MA132WA
QR301
UN9212
(INV.)
D302
MA110
D301
MA110
D304
MA133
X301
EXOV8004E0A
L310
3.9μ
L318
VLQ0140
IC304
MN6732
(DSP)
(Y/C PROCESS)
IC304-20 DIS MODE
3.8Vp-p (V-RATE)
IC304-32 DIS ON
4.2Vp-p (H-RATE)
IC304-32 DIS OFF
5.0Vp-p (H-RATE)
IC304-60 DIS ON
3.8Vp-p (H-RATE)
IC304-60 DIS OFF
3.8Vp-p (H-RATE)
IC316-11 STOP
0.6Vp-p (H-RATE) COLOUR BAR
V IN
(8bit)
Y OUT
(8bit)
C OUT
(8bit)
IC309
L7A0813
(ZOOM)
HD (B301-27) 3.0Vp-p
IC304-21 3.5Vp-p
IC304-22 3.5Vp-p
IC304-23 3.5Vp-p
IC304-24 3.5Vp-p
STOP (H) RAMP GENERATOR
CIN
(8bit)
Y IN
(8bit)
L312
6.8μ
IC316
AN2040SB
(L.P.F.)
IC316-10 STOP
0.4Vp-p (H-RATE) COLOUR BAR
IC316-3 STOP
1.1Vp-p (H-RATE) COLOUR BAR
Q302
2SD2216
(AMP)
L316
22μ
L311
10μ
IC313
MN657011H
(D/A CONV.)
IC313-29 STOP
0.6Vp-p (H-RATE) COLOUR BAR
IC313-25 STOP
580mVp-p (H-RATE) COLOUR BAR
IC313-27 STOP
0.4Vp-p (H-RATE) COLOUR BAR
Q303
2SD2216
(BUFFER)
L313
VLQ0291
TL301
TL302
TL304
TL303
TL305
TL306
TL307
HD (B301-27) 3.0Vp-p
IC304-72 4.0Vp-p
IC304-73 4.0Vp-p
IC304-74 4.0Vp-p
IC304-75 4.0Vp-p
IC304-62 4.8Vp-p
IC304-63 4.8Vp-p
IC304-64 4.8Vp-p
IC304-65 4.8Vp-p
STOP (H) RAMP GENERATOR
FP304 (TO POWER / Page : 3-52)
1 CAM 9V
2 CAM -8V
3 NOREG
4 NOREG
5 CAM 18V
6 NOREG GND
7 NOREG GND
8 Y
9 CAM 5V
10 CAM 5V
11 B-Y
12 GND (ANA)
13 GND (ANA)
14 PCBM R-Y
15 R-Y
16 CAM 3.5V
17 CAM 3.5V
18 PCBM B-Y
19 GND (DIGI)
20 GND (DIGI)
21 S DATA
22 CAM TEST
23 LI BATT +
24 CAM CLOCK
TO FP1001 (C-7)
B305 (TO DIGI. MEMO/Page : 3-33)
1 S DATA
2 BLKA
3 LI BATT +
4 NOREG
5 CP2A
6 1.8V
7 GND
8 GND
9 B-Y
10 CAM 5V
11 Y
12 RESET
13 CAM Y
14 CAM R-Y
15 CAM B-Y
16 R-Y
17 VD
18 CAM CLOCK
TO B101 (E-8)
HD (B301-27) 3.0Vp-p
IC309-47 4.0Vp-p
IC309-45 4.0Vp-p
IC309-44 4.0Vp-p
IC309-43 4.0Vp-p
STOP (H) RAMP GENERATOR
HD (B301-27) 3.0Vp-p
IC309-37 3.8Vp-p
IC309-36 3.8Vp-p
IC309-35 3.8Vp-p
IC309-34 3.8Vp-p
STOP (H) RAMP GENERATOR

GRAM FOR
LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

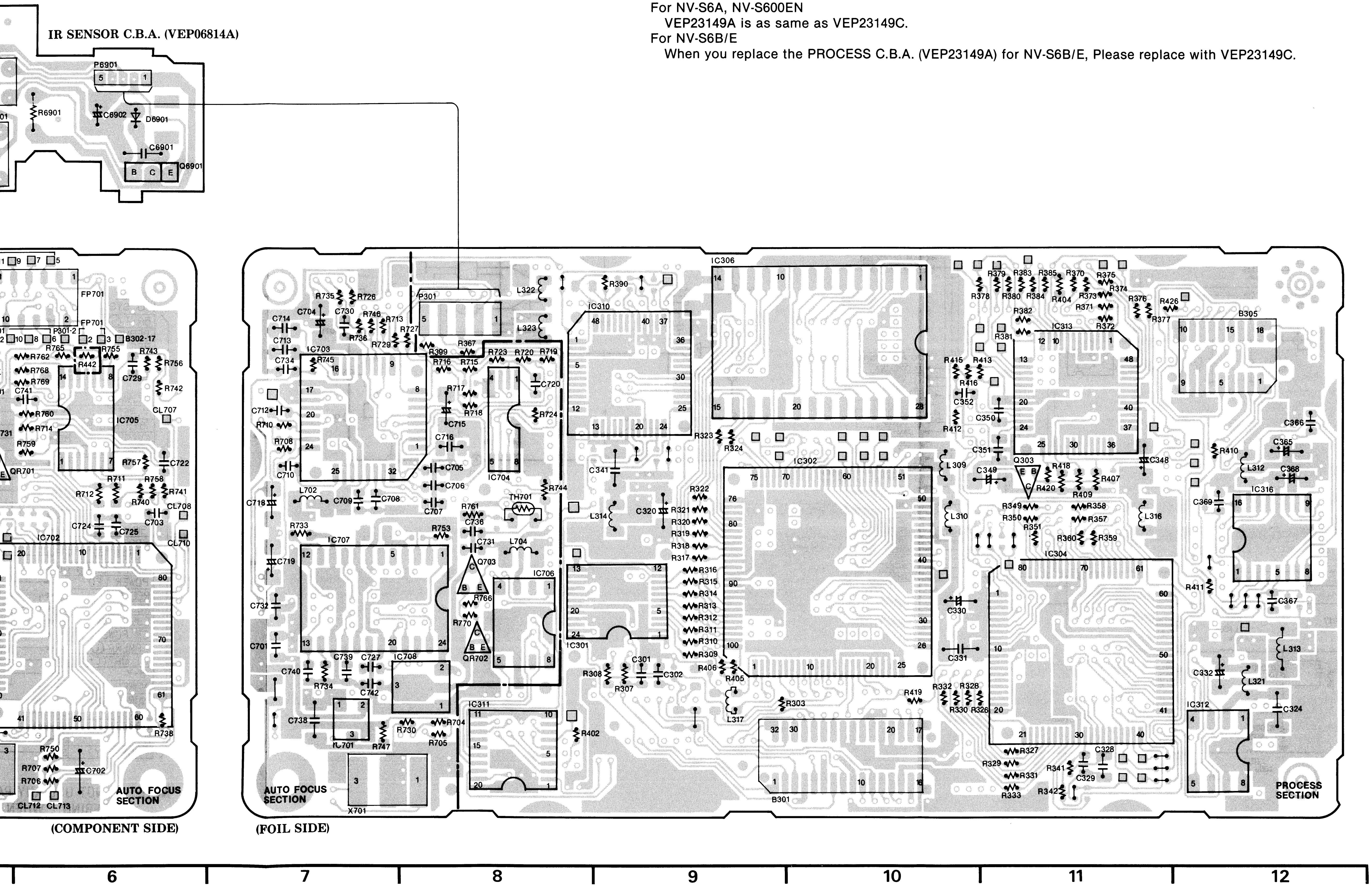
15 16 17 18 19 20 21 22 23 24 25 26

3-15. PROCESS & AUTO FOCUS C.B.A. (VEP23149A/C)


IR SENSOR C.B.A. (VEP06814A)
S6902
MF NEAR
S6901
MF FAR
P6901
R6902
R6901
C6902
D6901
C6901
Q6901
PROCESS & AUTO FOCUS C.B.A. (VEP23149A/C)
IC309
IC305
IC303
IC308
IC307
IC702
IC705
B302
FP304
FP701
X301
X302
X702
Q301
Q302
QR301
Q701
QR701
Q702
VR701
HALL AMP CTL
PROCESS SECTION
AUTO FOCUS SECTION
(COMPONENT SIDE)
AUTO FOCUS SECTION
IC707
IC703
X701
(FOIL SIDE)
E
D
C
B
A
1
2
3
4
5
6
7

NOTE:

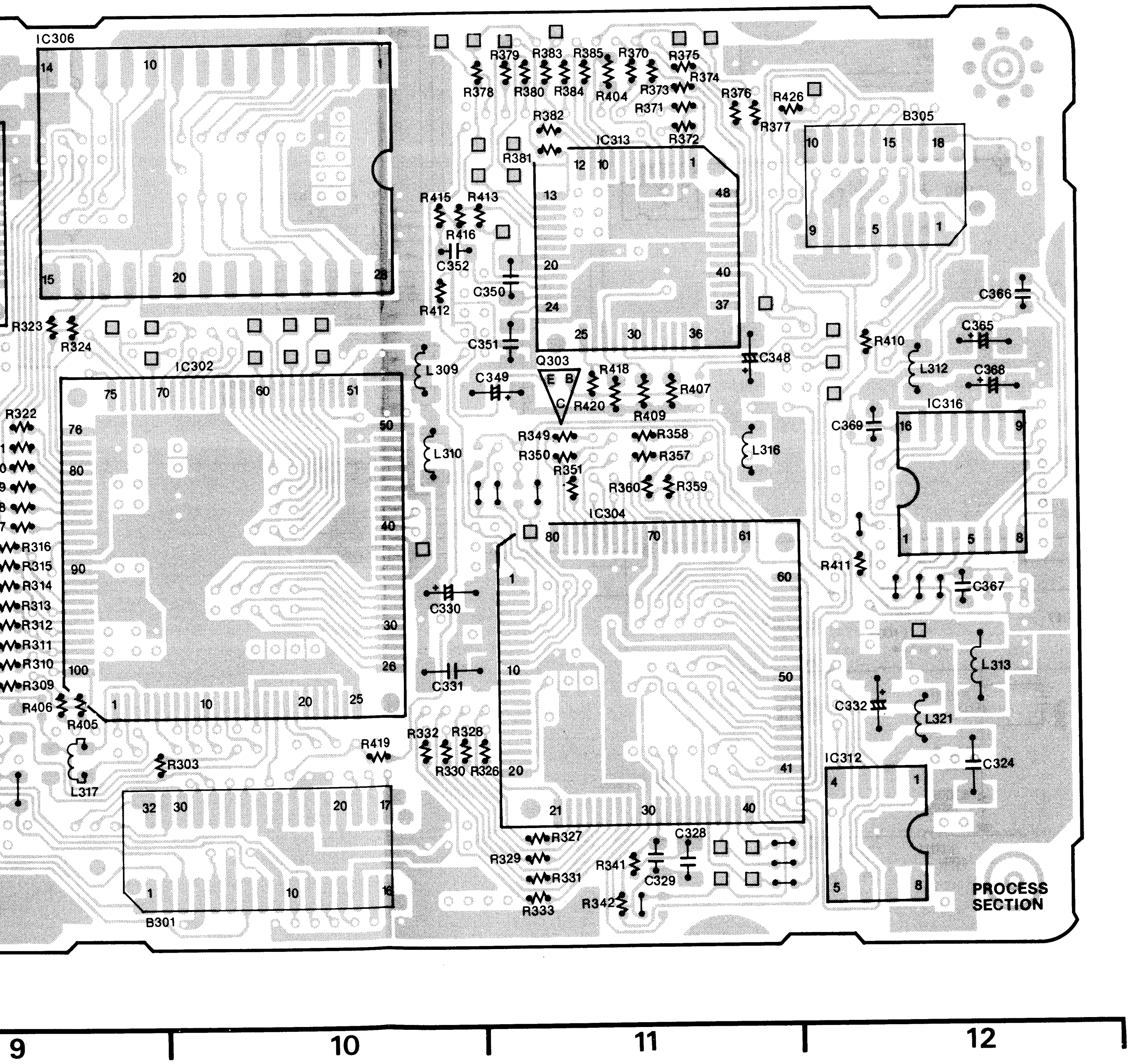
For NV-S6A, NV-S600EN
VEP23149A is as same as VEP23149C.
For NV-S6B/E
When you replace the PROCESS C.B.A. (VEP23149A) for NV-S6B/E, Please replace with VEP23149C.


IR SENSOR C.B.A. (VEP06814A)
P6901
R6901
C6902
D6901
C6901
Q6901
B C E
FP701
P301-2
B302-17
IC705
QR701
IC702
CL707
CL708
CL710
CL712
CL713
AUTO FOCUS SECTION
P301
IC703
IC704
IC707
IC706
IC708
IC701
IC311
X701
Q703
QR702
TH701
L702
L704
L322
L323
IC310
IC301
IC306
IC302
B301
IC313
IC304
B305
IC316
IC312
Q303
L309
L310
L312
L313
L314
L316
L317
L321
PROCESS SECTION
6
7
8
9
10
11
12

(COMPONENT SIDE)

(FOIL SIDE)

V-S6A, NV-S600EN
23149A is as same as VEP23149C.
V-S6B/E
n you replace the PROCESS C.B.A. (VEP23149A) for NV-S6B/E, Please replace with VEP23149C.


IC306
IC302
IC313
IC304
IC316
IC312
B301
B305
Q303
R379 R383 R385 R370 R375
R378 R380 R384 R404 R373 R374 R371 R376 R426 R377
R382 R372 R381
R415 R413 R416 C352 C350 R412
R323 R324 R322
C351 L309 C349 C348 R418 R407 R420 R409
R410 L312 C365 C366 C368 C369
R349 R350 R351 R358 R357 R360 R359 L316
L310 C330 C331 R411 C367 L313 C332 L321 C324
R316 R315 R314 R313 R312 R311 R310 R309 R406 R405 L317 R303
R419 R332 R328 R330 R326
R327 R329 R331 R333 R341 R342 C328 C329
PROCESS SECTION
9
10
11
12

3—50

PROCESS & AUTO FOCUS C.B.A.

Integrated Circuit	
IC301	B-9
IC302	B-10
IC303	B-3
IC304	B-11
IC305	C-3
IC306	C-10
IC307	A-3
IC308	B-2
IC309	C-2
IC310	C-9
IC311	A-8
IC312	A-12
IC313	C-11
IC316	B-12
IC701	A-7
IC702	B-6
IC703	C-7
IC704	C-8
IC705	C-6
IC706	B-8
IC707	B-7
IC708	A-8

Transistor	
Q301	B-4
Q302	B-1
Q303	C-11
Q701	C-5
Q702	B-5
Q703	B-8
Q6901	D-6

Transistor & Resistor	
QR301	B-3
QR701	C-5
QR702	B-8

Diode	
D301	B-3
D302	B-3
D303	A-3
D304	A-3
D701	C-5

Test Point	
CL301	A-3
CL302	A-4
CL303	A-3
CL304	A-3
CL701	A-4
CL702	B-5
CL703	B-4
CL704	B-4
CL705	A-5
CL706	B-1
CL707	C-6
CL708	B-6
CL709	C-5
CL710	B-6
CL711	B-5
CL712	A-6
CL713	A-6
TL301	A-2
TL302	A-1
TL303	A-1
TL304	A-1
TL305	A-1
TL306	A-2
TL307	A-1
TL308	D-4

Adjustment	
VR701	C-5

Thermistor	
TH701	B-8

Connector	
B301	A-10
B302	A-4
B305	C-12
FP304	B-1
FP701	C-5
P6901	D-6
P301	C-8
P6901	D-6

Crystal Oscillator	
X301	A-1
X302	A-2
X701	A-7
X702	A-5

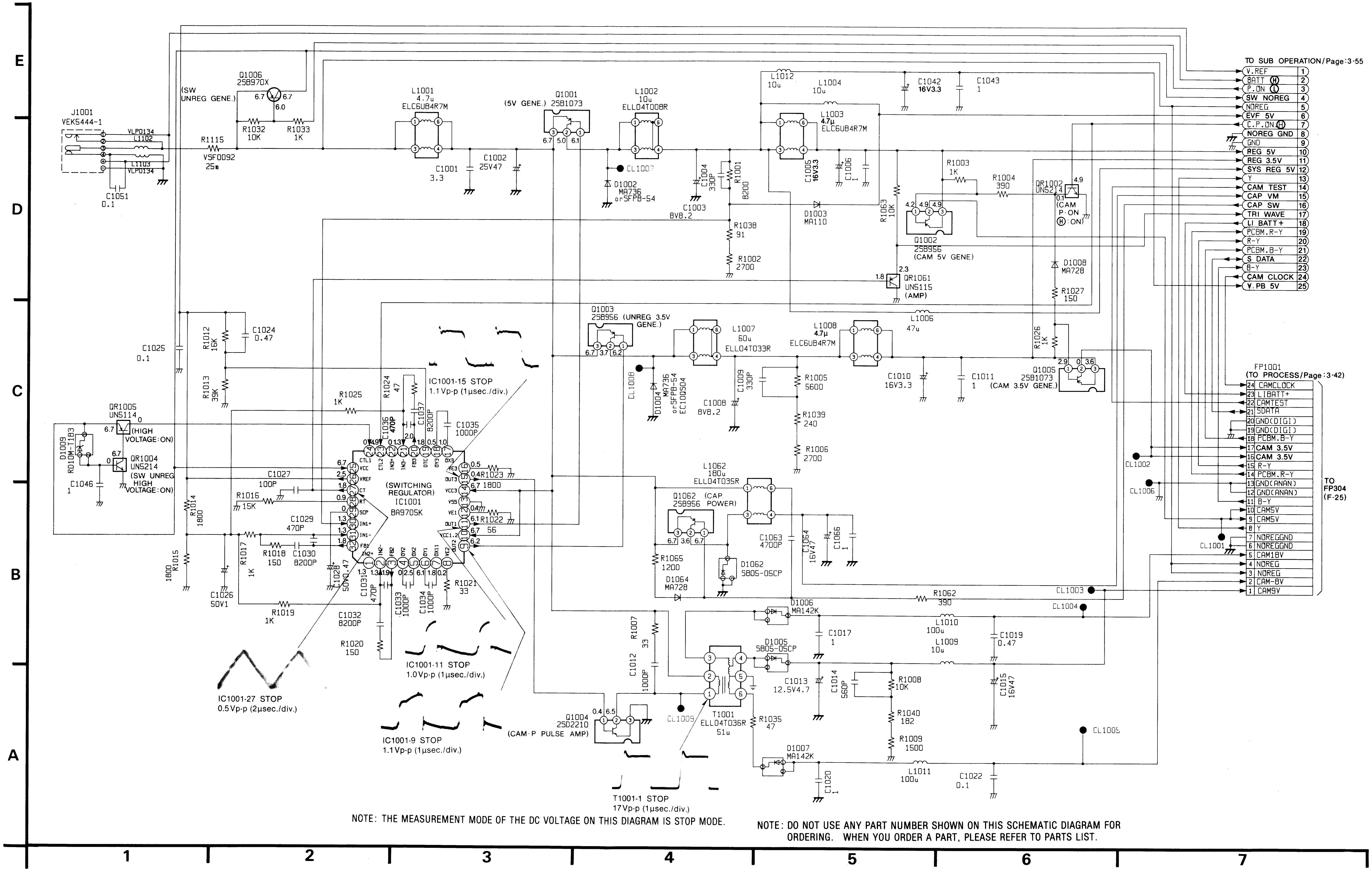
Coil	
L301	A-3
L302	B-5
L303	B-4
L304	B-5
L305	B-3
L306	C-4
L307	C-4
L308	B-4
L309	C-10
L310	B-10
L311	D-2
L312	C-12
L313	B-12
L314	B-9
L315	A-5
L316	B-11
L317	A-9
L318	B-2
L320	B-4
L321	A-12
L322	C-8
L323	C-8
L702	B-7
L703	C-5
L704	B-8

Capacitor	
C301	B-9
C302	B-9
C308	B-4
C316	B-5
C317	B-5
C318	B-4
C319	B-5
C320	B-9
C321	C-3
C322	B-3
C324	A-12
C325	A-5
C326	B-4
C327	B-4
C328	A-11
C329	A-11
C330	B-10
C331	B-10
C332	A-12
C333	C-4
C335	A-3
C336	B-3
C339	B-2
C341	B-9
C348	C-11
C349	C-11
C350	C-11
C351	C-11
C352	C-10
C365	C-12
C366	C-12
C367	B-12
C368	C-12
C369	B-12
C701	B-7
C702	A-6
C703	B-6
C704	C-7
C705	C-8
C706	B-8
C707	B-8
C708	B-7
C709	B-7
C710	C-7
C712	C-7
C713	C-7
C714	C-7
C715	C-8
C716	C-8
C717	C-5
C718	B-7
C719	B-7
C720	C-8
C721	C-5
C722	C-6
C724	B-6
C725	B-6
C726	B-5
C727	B-7
C729	C-6
C730	C-7
C731	B-8
C732	B-7
C733	B-5
C734	C-7
C736	B-8
C738	A-7
C739	A-7
C740	A-7
C741	C-6
C742	A-7
C743	A-5
C744	A-5

Resistor	
R301	A-4
R303	A-9
R307	A-9
R308	A-9
R309	B-9
R310	B-9
R311	B-9
R312	B-9
R313	B-9
R314	B-9
R315	B-9
R316	B-9
R317	B-9
R318	B-9
R319	B-9
R320	B-9
R321	B-9
R322	B-9
R323	C-9
R324	C-9
R325	A-5
R326	A-10
R327	A-11
R328	A-10
R329	A-11
R330	A-10
R331	A-11
R332	A-10
R333	A-11
R334	A-3
R335	B-3
R337	B-4
R338	B-4
R339	B-4
R340	B-4
R341	A-11
R342	A-11
R349	B-11
R350	B-11
R351	B-11
R352	B-2
R353	B-2
R354	B-2
R355	B-2
R356	B-3
R357	B-11
R358	B-11
R359	B-11
R360	B-11
R361	B-2
R362	B-2
R363	B-2
R364	B-2
R365	A-3
R366	B-3
R368	B-3
R369	C-1
R370	C-11
R371	C-11
R372	C-11
R373	C-11
R374	C-11
R375	C-11
R376	C-11
R377	C-11
R378	C-10
R379	C-11
R380	C-11
R381	C-11
R382	C-11
R383	C-11
R384	C-11
R385	C-11
R386	B-2
R388	C-5
R391	C-4
R392	C-4
R393	C-4
R394	C-5
R401	B-2
R402	A-8
R403	C-2
R404	C-11
R405	B-9
R406	B-9
R407	B-11
R408	B-2
R409	B-11
R410	C-12
R411	B-12
R412	C-10
R413	C-10
R415	C-10
R416	C-10
R418	B-11
R419	A-10
R420	B-11
R425	C-1
R426	C-11
R428	B-4
R429	B-4
R435	B-4
R436	B-4
R437	B-4
R438	B-4
R439	A-5
R442	C-6
R704	A-8
R705	A-8
R706	A-6
R707	A-6
R708	C-7
R710	C-7
R711	B-6
R712	B-6
R713	C-7
R714	C-6
R715	C-8
R716	C-8
R717	C-8
R718	C-8
R719	C-8
R720	C-8
R721	C-5
R722	C-5
R723	C-8
R724	C-8
R725	C-5
R726	C-7
R727	C-8
R728	C-5
R729	C-7
R730	A-8
R731	C-5
R733	B-7
R734	A-7
R735	C-7
R736	C-7
R738	A-6
R739	C-5
R740	B-6
R741	B-6
R742	C-6
R743	C-6
R744	B-8
R745	C-7
R746	C-7
R747	A-7
R750	A-6
R753	B-8
R755	C-6
R756	C-6
R757	C-6
R758	B-6
R759	C-6
R760	C-6
R761	B-8
R762	C-6
R765	C-6
R766	B-8
R768	C-6
R769	C-6
R770	B-8

ADDRESS INFORMATION

3-16. POWER SCHEMATIC DIAGRAM

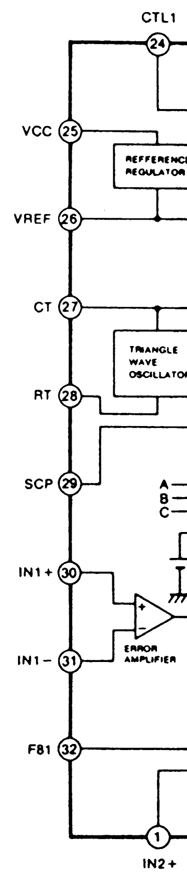

E
D
C
B
A
1
2
3
4
5
6
7
J1001
VEK5444-1
VLP0134
L1102
L1103
VLP0134
C1051
0.1
R1115
VSF0092
25m
(SW
UNREG GENE.)
Q1006
2SB970X
6.7
6.7
6.0
R1032
10K
R1033
1K
L1001
4.7u
ELC6UB4R7M
C1001
3.3
C1002
25V47
(5V GENE.)
Q1001
2SB1073
6.7
5.0
6.1
L1002
10u
ELL04T008R
CL1007
D1002
MA736
or SFPB-54
C1004
330P
R1001
8200
C1003
8V8.2
R1038
91
R1002
2700
L1012
10u
L1004
10u
L1003
4.7μ
ELC6UB4R7M
C1005
16V3.3
C1006
1
D1003
MA110
C1042
16V3.3
C1043
1
R1003
1K
R1004
390
R1063
10K
Q1002
2SB956
(CAM 5V GENE)
4.2
4.9
4.9
QR1002
UN5214
4.9
0.1
(CAM
P-ON
H ON)
D1008
MA728
R1027
150
QR1061
UN5115
(AMP)
1.8
2.3
TO SUB OPERATION/Page:3-55
V.REF 1
BATT H 2
P.ON L 3
SW NOREG 4
NOREG 5
EVF 5V 6
C.P.ON H 7
NOREG GND 8
GND 9
REG 5V 10
REG 3.5V 11
SYS REG 5V 12
Y 13
CAM TEST 14
CAP VM 15
CAP SW 16
TRI WAVE 17
LI BATT+ 18
PCBM.R-Y 19
R-Y 20
PCBM.B-Y 21
S DATA 22
B-Y 23
CAM CLOCK 24
V.PB 5V 25
C1025
0.1
R1012
16K
C1024
0.47
R1013
39K
R1025
1K
R1024
47
C1036
470P
C1037
8200P
C1035
1000P
IC1001-15 STOP
1.1Vp-p (1μsec./div.)
Q1003
2SB956 (UNREG 3.5V GENE.)
6.7
3.7
6.2
L1007
60u
ELL04T033R
L1008
4.7μ
ELC6UB4R7M
L1006
47u
R1026
1K
CL1008
D1004
MA736
or SFPB-54
EC10DS04
C1009
330P
C1008
8V8.2
R1005
5600
R1039
240
R1006
2700
C1010
16V3.3
C1011
1
Q1005
2SB1073
(CAM 3.5V GENE.)
2.9
0
3.6
FP1001
(TO PROCESS/Page:3-42)
24 CAMCLOCK
23 LIBATT+
22 CAMTEST
21 SDATA
20 GND(DIGI)
19 GND(DIGI)
18 PCBM.B-Y
17 CAM 3.5V
16 CAM 3.5V
15 R-Y
14 PCBM.R-Y
13 GND(ANAN)
12 GND(ANAN)
11 B-Y
10 CAM5V
9 CAM5V
8 Y
7 NOREGGND
6 NOREGGND
5 CAM18V
4 NOREG
3 NOREG
2 CAM-8V
1 CAM9V
TO
FP304
(F-25)
CL1002
CL1006
CL1001
QR1005
UN5114
6.7
0
(HIGH
VOLTAGE:ON)
D1009
RD10M-T1B3
QR1004
UN5214
6.7
0
(SW UNREG
HIGH
VOLTAGE:ON)
C1046
1
R1014
1800
R1015
1800
C1027
100P
R1016
15K
C1029
470P
R1017
1K
R1018
150
C1030
8200P
C1026
50V1
C1028
50V0.47
R1019
1K
(SWITCHING
REGULATOR)
IC1001
BA9705K
CTL1
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
IN2+
IN2-
FB2
DTC
DY3
DX3
VE3
OUT3
VCC3
VSS
VE1
OUT1
VCC1.2
VE2
OUT2
DY1
DX1
DY2
DX2
0.49
0.13
2.0
1.8
0.5
1.0
6.7
2.5
1.8
0.9
0
1.3
1.3
1.8
0.5
0.4
R1023
1800
6.7
0.47
6.1
R1022
6.7
56
6.2
1.3
1.3
1.9
0
2.5
6.1
1.8
0.2
C1031
470P
C1033
1000P
C1034
1000P
R1021
33
C1032
8200P
R1020
150
IC1001-27 STOP
0.5Vp-p (2μsec./div.)
IC1001-11 STOP
1.0Vp-p (1μsec./div.)
IC1001-9 STOP
1.1Vp-p (1μsec./div.)
L1062
180u
ELL04T035R
Q1062 (CAP
2SB956 POWER)
6.7
3.6
6.7
C1063
4700P
C1064
16V47
C1066
1
R1065
1200
D1062
SB05-05CP
D1064
MA728
R1062
390
CL1003
CL1004
D1006
MA142K
C1017
1
L1010
100u
C1019
0.47
D1005
SB05-05CP
L1009
10u
R1007
33
C1012
1000P
C1013
12.5V4.7
C1014
560P
R1008
10K
R1040
182
R1009
1500
C1015
16V47
T1001
ELL04T036R
51u
R1035
47
CL1009
Q1004
2SD2210
(CAM-P PULSE AMP)
0.4
6.5
D1007
MA142K
C1020
1
L1011
100u
C1022
0.1
CL1005
T1001-1 STOP
17Vp-p (1μsec./div.)

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

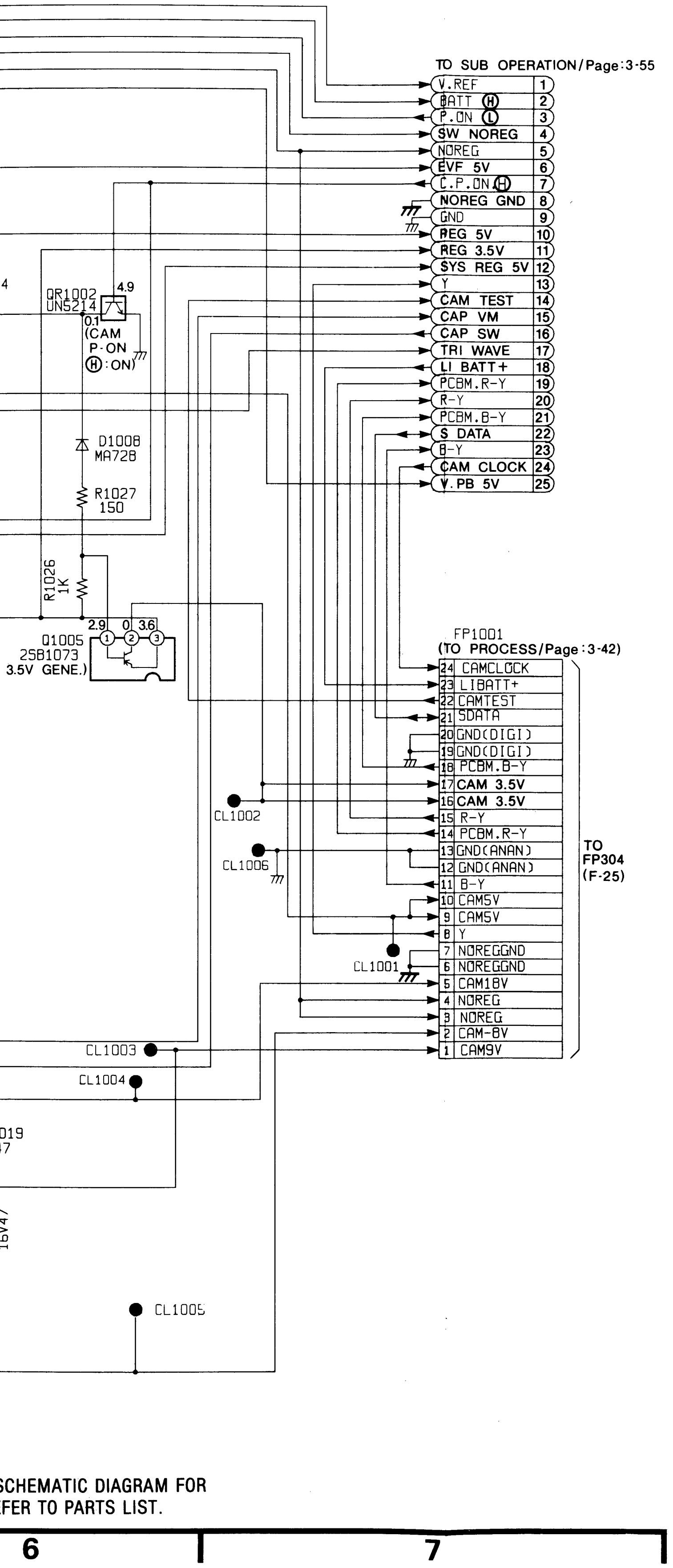
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IC BLOC

IC1001 (BA97


CTL1
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
IN2+
REFERENCE REGULATOR
TRIANGLE WAVE OSCILLATOR
ERROR AMPLIFIER
A
B
C

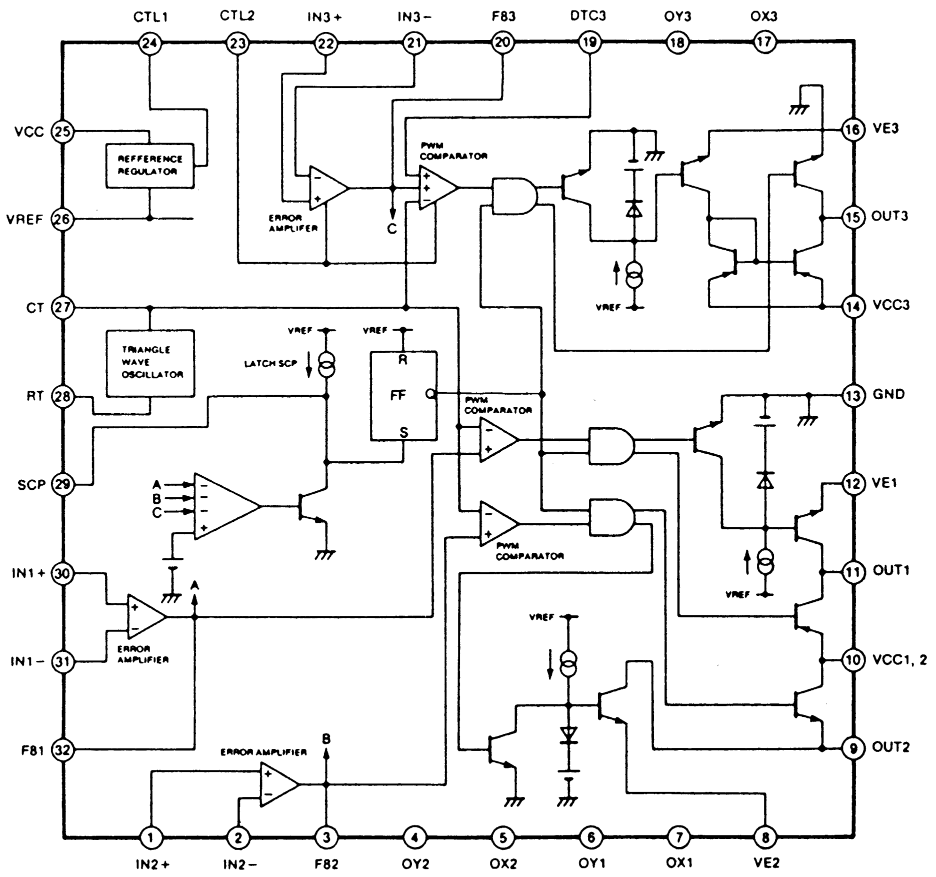
Back Page:
PROCESS & ATUO FOCUS C.B.A. Section


TO SUB OPERATION/Page:3-55
V.REF 1
BATT Ⓗ 2
P.ON Ⓛ 3
SW NOREG 4
NOREG 5
EVF 5V 6
C.P.ON Ⓗ 7
NOREG GND 8
GND 9
REG 5V 10
REG 3.5V 11
SYS REG 5V 12
Y 13
CAM TEST 14
CAP VM 15
CAP SW 16
TRI WAVE 17
LI BATT+ 18
PCBM.R-Y 19
R-Y 20
PCBM.B-Y 21
S DATA 22
B-Y 23
CAM CLOCK 24
V.PB 5V 25
QR1002
UN5214
4.9
0.1
(CAM P·ON Ⓗ:ON)
D1008
MA728
R1027
150
R1026
1K
Q1005
2SB1073
3.5V GENE.)
2.9
0
3.6
FP1001
(TO PROCESS/Page:3-42)
24 CAMCLOCK
23 LIBATT+
22 CAMTEST
21 SDATA
20 GND(DIGI)
19 GND(DIGI)
18 PCBM.B-Y
17 CAM 3.5V
16 CAM 3.5V
15 R-Y
14 PCBM.R-Y
13 GND(ANAN)
12 GND(ANAN)
11 B-Y
10 CAM5V
9 CAM5V
8 Y
7 NOREGGND
6 NOREGGND
5 CAM18V
4 NOREG
3 NOREG
2 CAM-8V
1 CAM9V
TO FP304 (F-25)
CL1002
CL1006
CL1001
CL1003
CL1004
CL1005
6
7

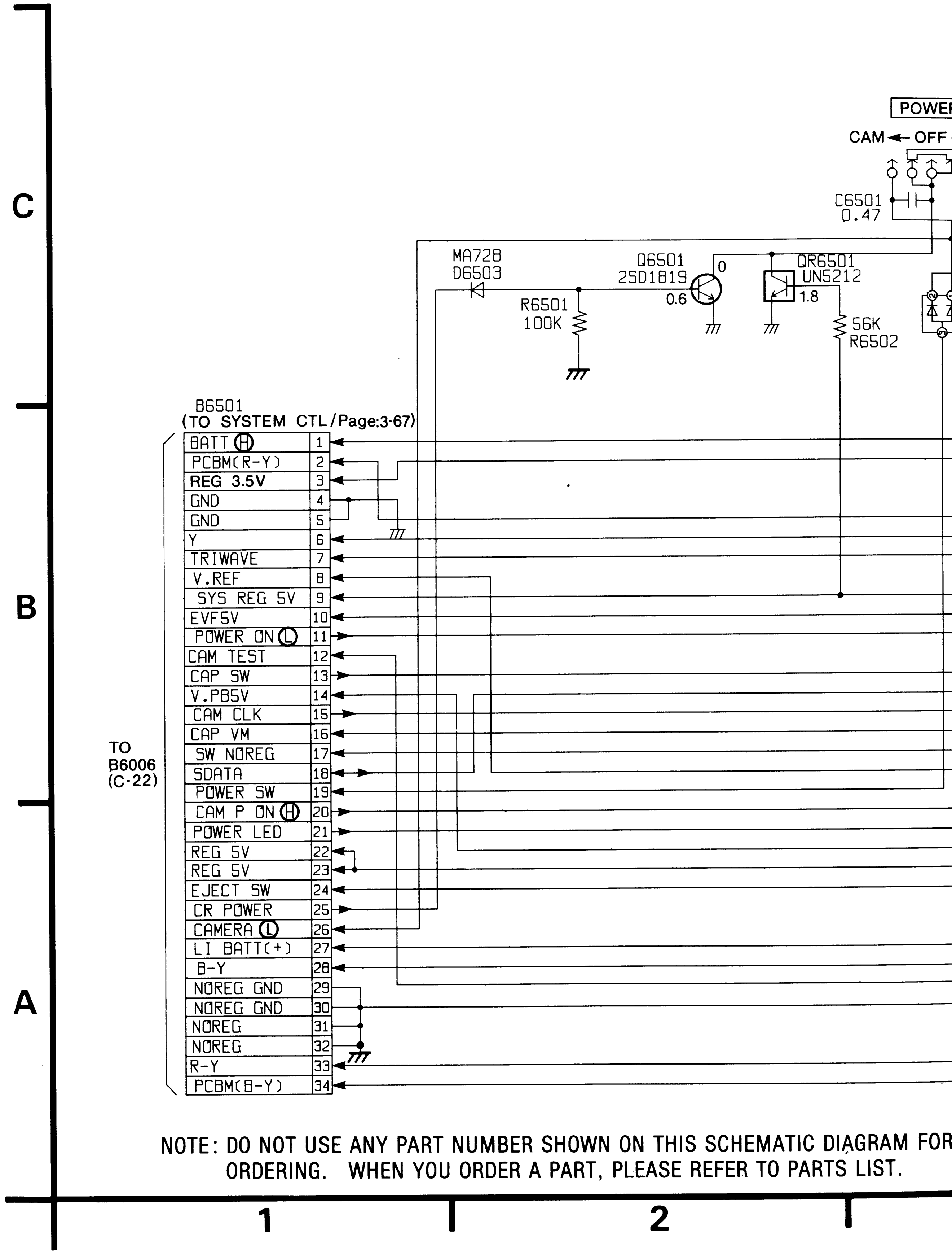
SCHEMATIC DIAGRAM FOR
FER TO PARTS LIST.

IC BLOCK

IC1001 (BA9705K)

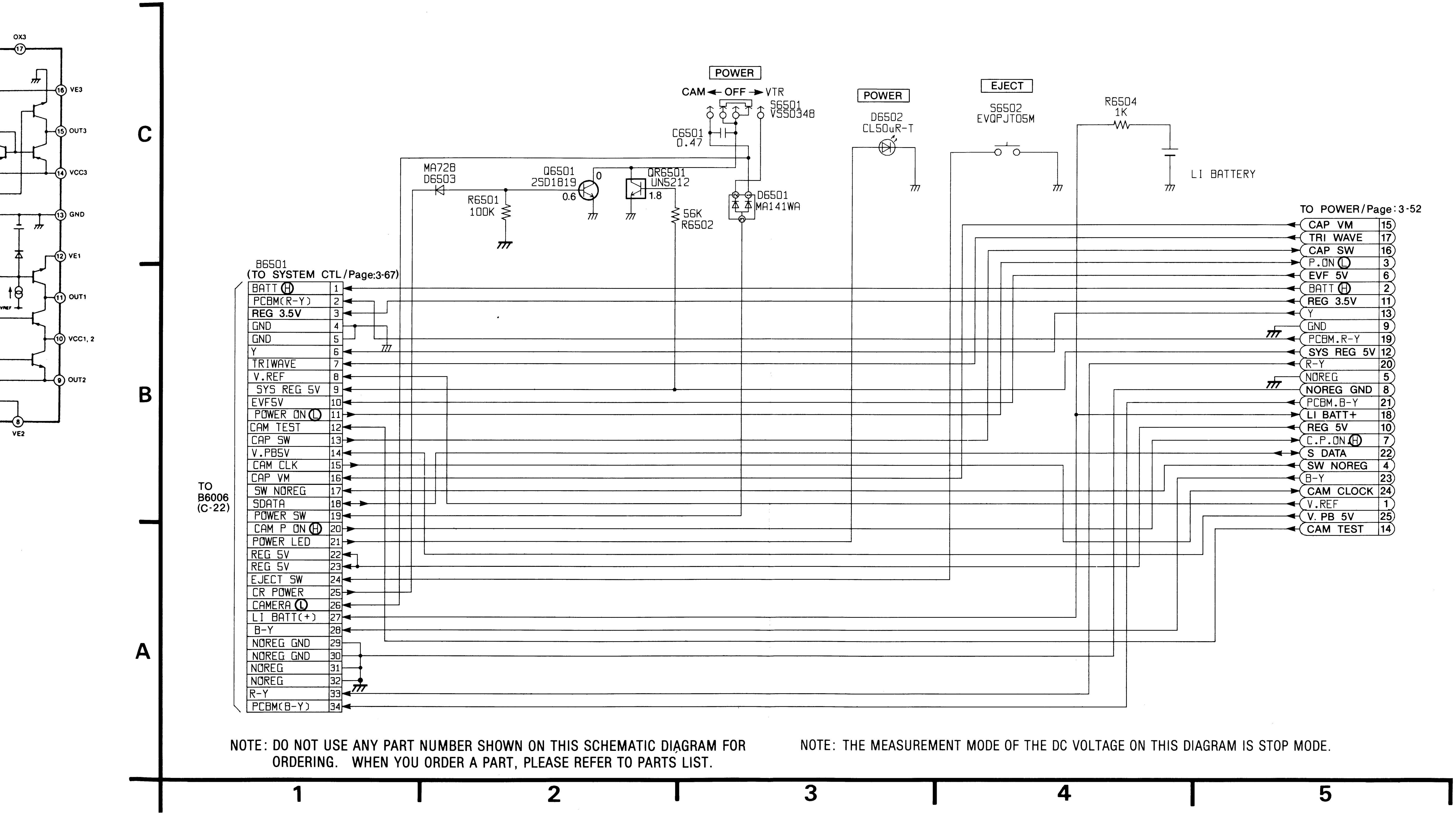

CTL1
CTL2
IN3+
IN3−
F83
DTC3
OY3
OX3
VCC 25
VREF 26
CT 27
RT 28
SCP 29
IN1+ 30
IN1− 31
F81 32
16 VE3
15 OUT3
14 VCC3
13 GND
12 VE1
11 OUT1
10 VCC1, 2
9 OUT2
IN2+
IN2−
F82
OY2
OX2
OY1
OX1
VE2
REFFERENCE REGULATOR
ERROR AMPLIFER
PWM COMPARATOR
TRIANGLE WAVE OSCILLATOR
LATCH SCP
VREF
R
FF
S
Q
A
B
C
ERROR AMPLIFIER
ERROR AMPLIFIER

3-17. SUB OPERATION SCHEMATIC DIAGRAM


C
B
A
POWEI
CAM ← OFF
C6501
0.47
MA728
D6503
Q6501
2SD1819
0
0.6
QR6501
UN5212
1.8
R6501
100K
56K
R6502
B6501
(TO SYSTEM CTL/Page:3-67)
BATT Ⓗ 1
PCBM(R-Y) 2
REG 3.5V 3
GND 4
GND 5
Y 6
TRIWAVE 7
V.REF 8
SYS REG 5V 9
EVF5V 10
POWER ON Ⓛ 11
CAM TEST 12
CAP SW 13
V.PB5V 14
CAM CLK 15
CAP VM 16
SW NOREG 17
SDATA 18
POWER SW 19
CAM P ON Ⓗ 20
POWER LED 21
REG 5V 22
REG 5V 23
EJECT SW 24
CR POWER 25
CAMERA Ⓛ 26
LI BATT(+) 27
B-Y 28
NOREG GND 29
NOREG GND 30
NOREG 31
NOREG 32
R-Y 33
PCBM(B-Y) 34
TO B6006 (C-22)
1
2

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

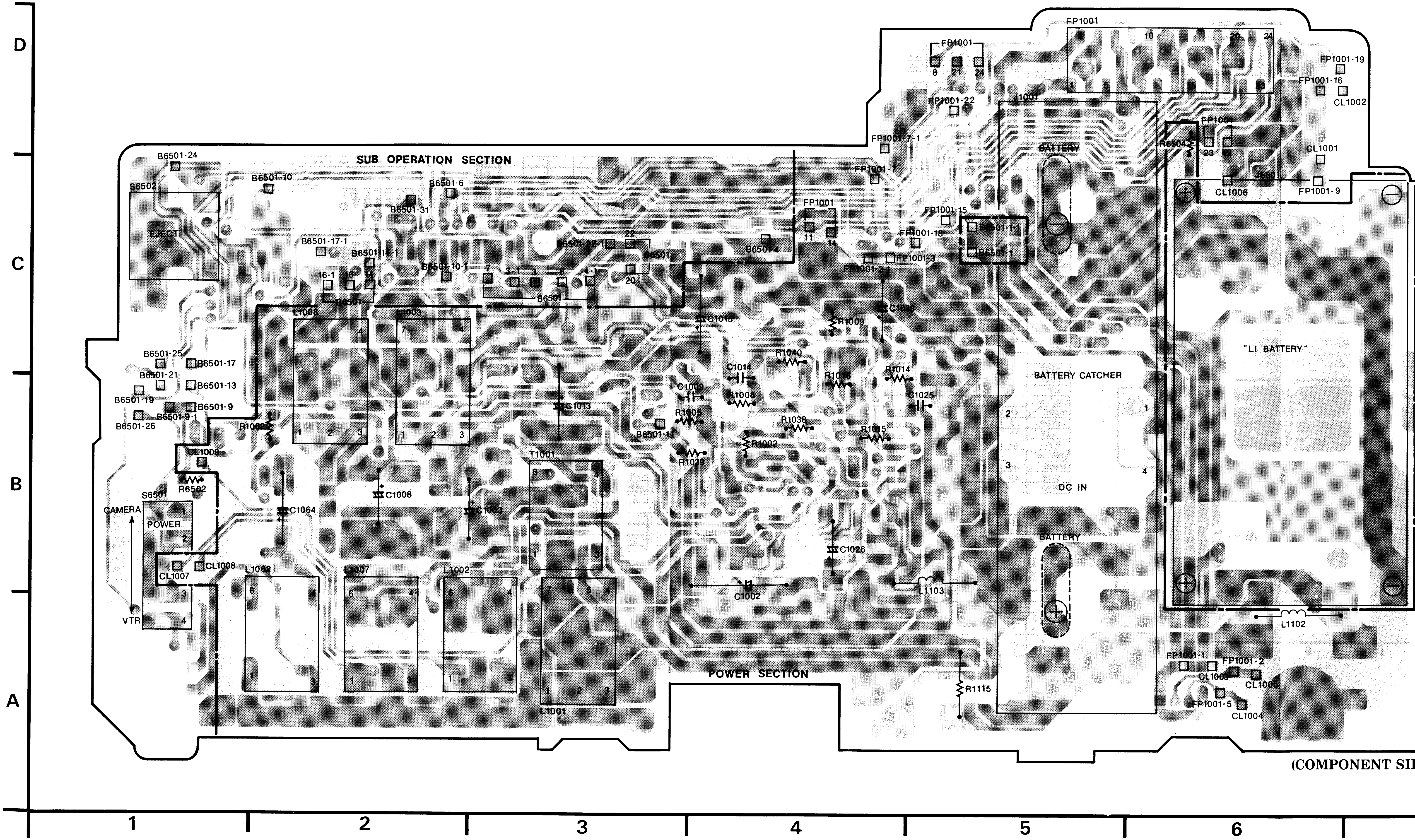
3-17. SUB OPERATION SCHEMATIC DIAGRAM


OX3
VE3
OUT3
VCC3
GND
VE1
OUT1
VCC1, 2
OUT2
VE2
VREF
C
B
A
1
2
3
4
5
POWER
CAM ◄ OFF ► VTR
S6501
VSS0348
C6501
0.47
MA728
D6503
Q6501
2SD1819
0
0.6
QR6501
UN5212
1.8
R6501
100K
56K
R6502
D6501
MA141WA
POWER
D6502
CL50uR-T
EJECT
S6502
EVQPJT05M
R6504
1K
LI BATTERY
B6501
(TO SYSTEM CTL/Page:3-67)
TO
B6006
(C-22)
1 BATT Ⓗ
2 PCBM(R-Y)
3 REG 3.5V
4 GND
5 GND
6 Y
7 TRIWAVE
8 V.REF
9 SYS REG 5V
10 EVF5V
11 POWER ON Ⓛ
12 CAM TEST
13 CAP SW
14 V.PB5V
15 CAM CLK
16 CAP VM
17 SW NOREG
18 SDATA
19 POWER SW
20 CAM P ON Ⓗ
21 POWER LED
22 REG 5V
23 REG 5V
24 EJECT SW
25 CR POWER
26 CAMERA Ⓛ
27 LI BATT(+)
28 B-Y
29 NOREG GND
30 NOREG GND
31 NOREG
32 NOREG
33 R-Y
34 PCBM(B-Y)
TO POWER/Page:3-52
CAP VM 15
TRI WAVE 17
CAP SW 16
P.ON Ⓛ 3
EVF 5V 6
BATT Ⓗ 2
REG 3.5V 11
Y 13
GND 9
PCBM.R-Y 19
SYS REG 5V 12
R-Y 20
NOREG 5
NOREG GND 8
PCBM.B-Y 21
LI BATT+ 18
REG 5V 10
C.P.ON Ⓗ 7
S DATA 22
SW NOREG 4
B-Y 23
CAM CLOCK 24
V.REF 1
V. PB 5V 25
CAM TEST 14

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

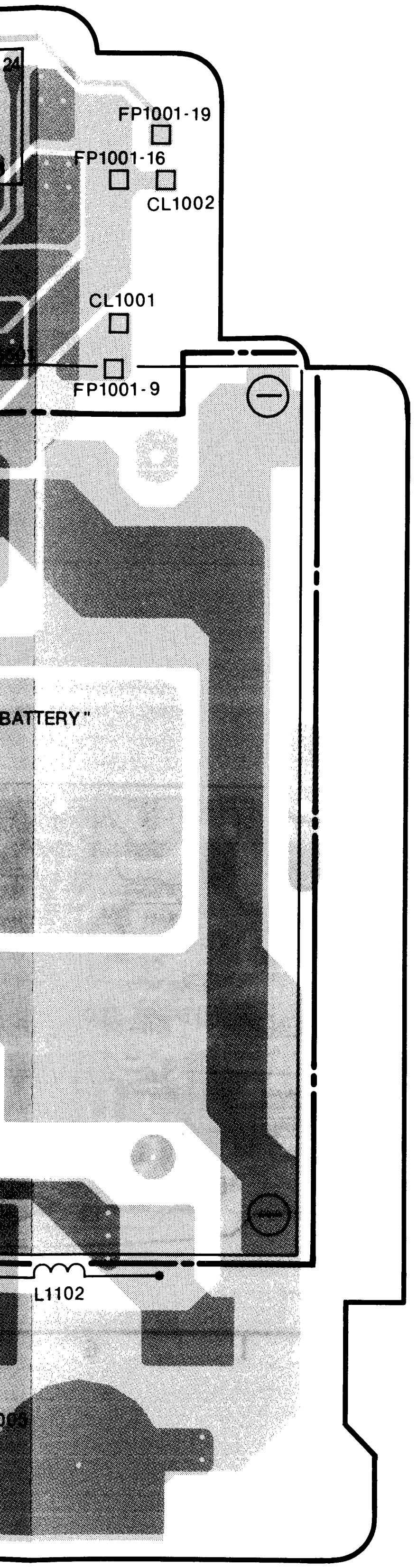
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

3-18. POWER & SUB OPERATION C.B.A. (VEP01510A)

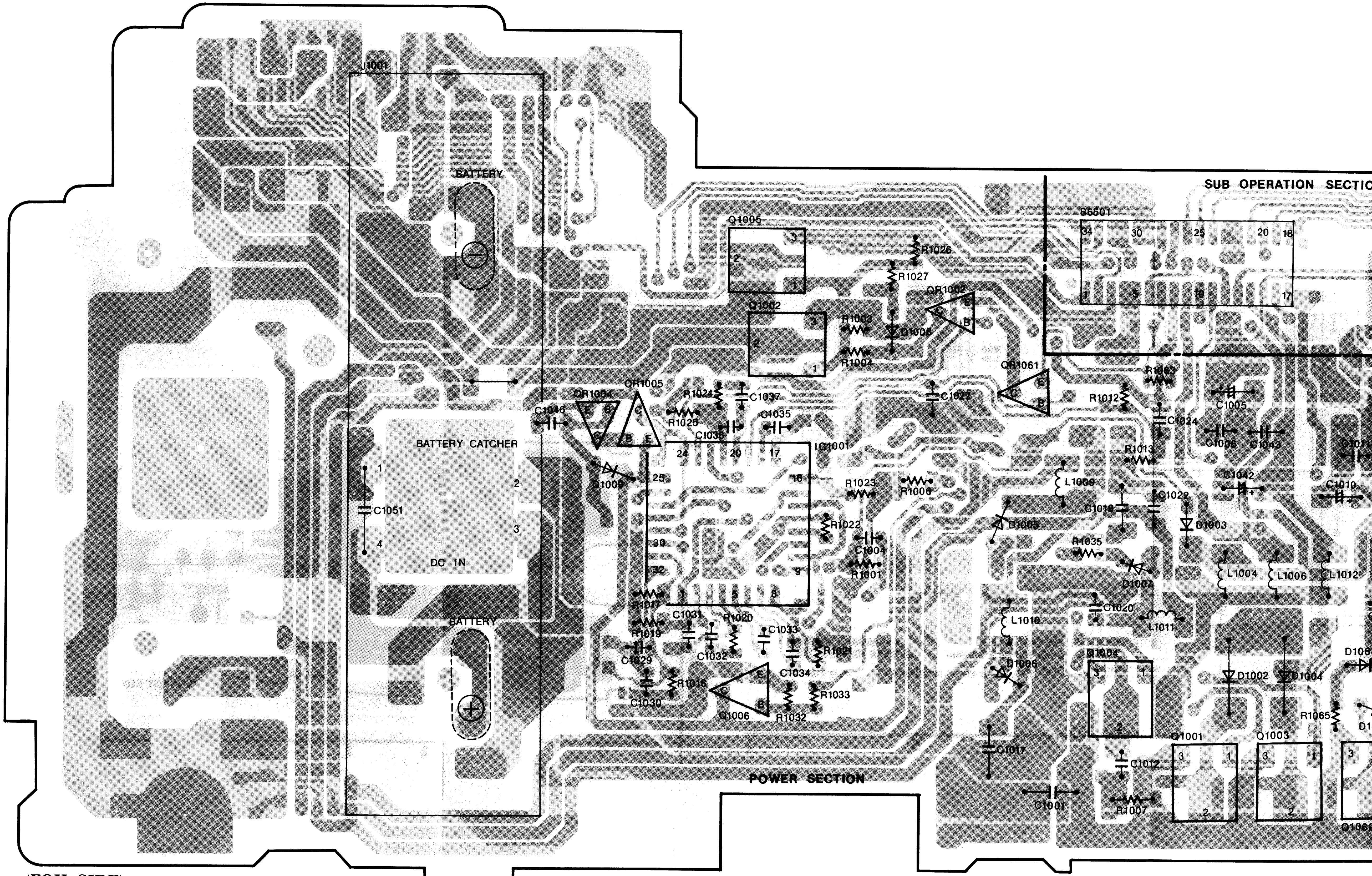


D
C
B
A
1
2
3
4
5
6
SUB OPERATION SECTION
POWER SECTION
EJECT
S6502
S6501
POWER
CAMERA
VTR
B6501-24
B6501-10
B6501-6
B6501-31
B6501-17-1
B6501-14-1
B6501-10-1
B6501-22-1
B6501-4
B6501
B6501-25
B6501-17
B6501-21
B6501-13
B6501-19
B6501-9
B6501-9-1
B6501-26
B6501-11
B6501-1-1
B6501-1
R6502
R1062
CL1009
CL1007
CL1008
L1008
L1003
L1062
L1007
L1002
L1001
T1001
C1064
C1008
C1003
C1013
C1015
C1014
C1009
R1005
R1039
R1008
R1040
R1002
R1038
R1016
R1009
C1028
R1014
C1025
R1015
C1026
C1002
L1103
R1115
FP1001
FP1001-22
FP1001-7-1
FP1001-7
FP1001-15
FP1001-18
FP1001-3
FP1001-3-1
FP1001-19
FP1001-16
CL1002
CL1001
FP1001-9
CL1006
J6501
J1001
R6504
BATTERY
BATTERY CATCHER
DC IN
"LI BATTERY"
L1102
FP1001-1
FP1001-2
CL1003
CL1005
FP1001-5
CL1004

(COMPONENT SI

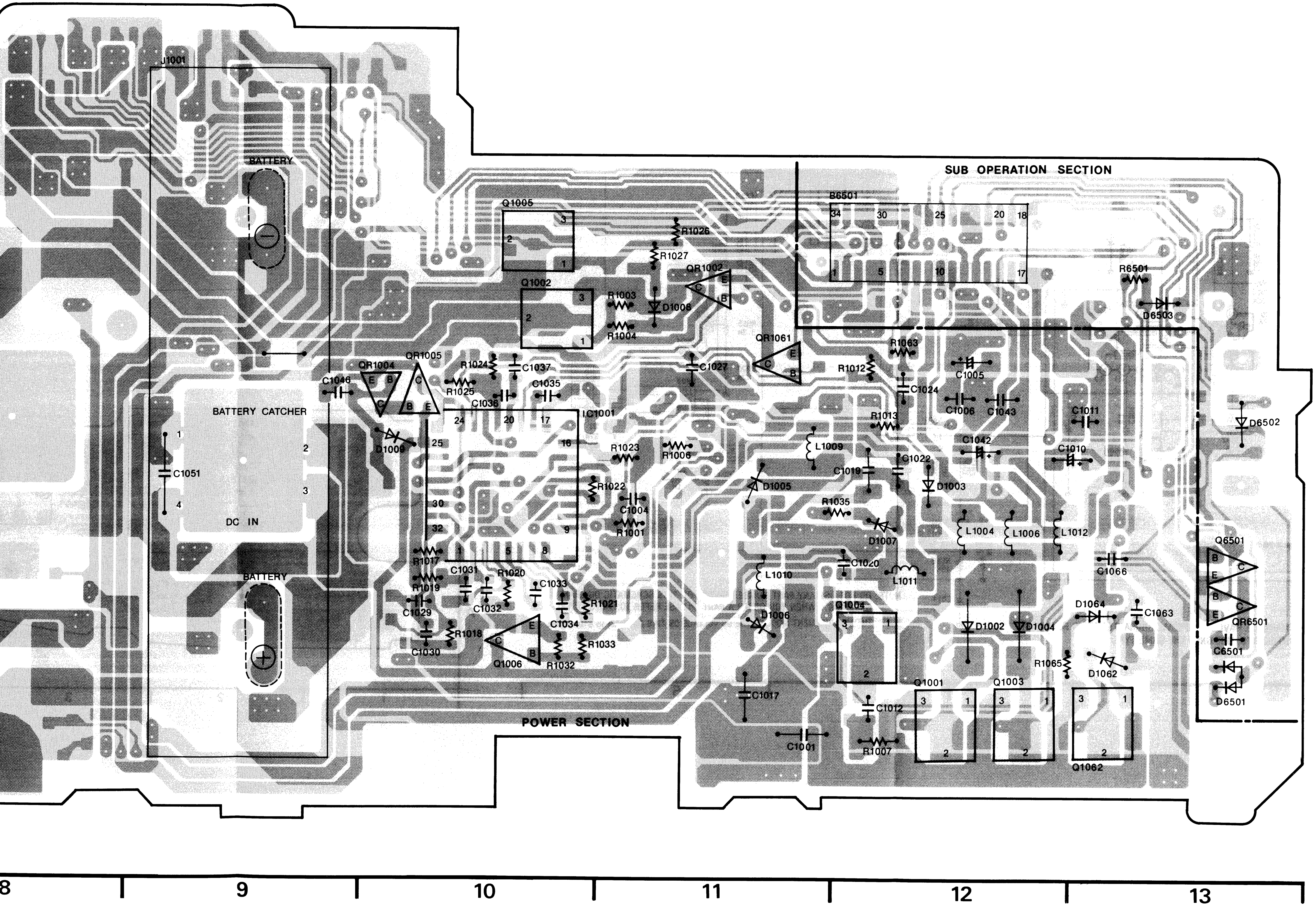

FP1001-19
FP1001-16
CL1002
CL1001
FP1001-9
BATTERY"
L1102

(COMPONENT SIDE)


J1001
BATTERY
BATTERY CATCHER
DC IN
C1051
BATTERY
C1046
QR1004
QR1005
D1009
Q1005
Q1002
R1026
R1027
QR1002
R1003
D1008
R1004
QR1061
R1024
R1025
C1037
C1036
C1035
C1027
IC1001
R1023
R1006
R1022
C1004
R1001
R1017
R1019
C1029
C1030
C1031
R1020
C1032
C1033
R1021
C1034
R1018
Q1006
R1032
R1033
SUB OPERATION SECTION
B6501
R1063
R1012
C1005
C1024
C1006
C1043
C1011
R1013
L1009
C1042
C1010
C1019
C1022
D1005
D1003
R1035
D1007
L1004
L1006
L1012
C1020
L1011
L1010
D1006
Q1004
D1002
D1004
D1060
R1065
C1017
C1012
Q1001
Q1003
C1001
R1007
Q1062
POWER SECTION

(FOIL SIDE)

7 8 9 10 11 12

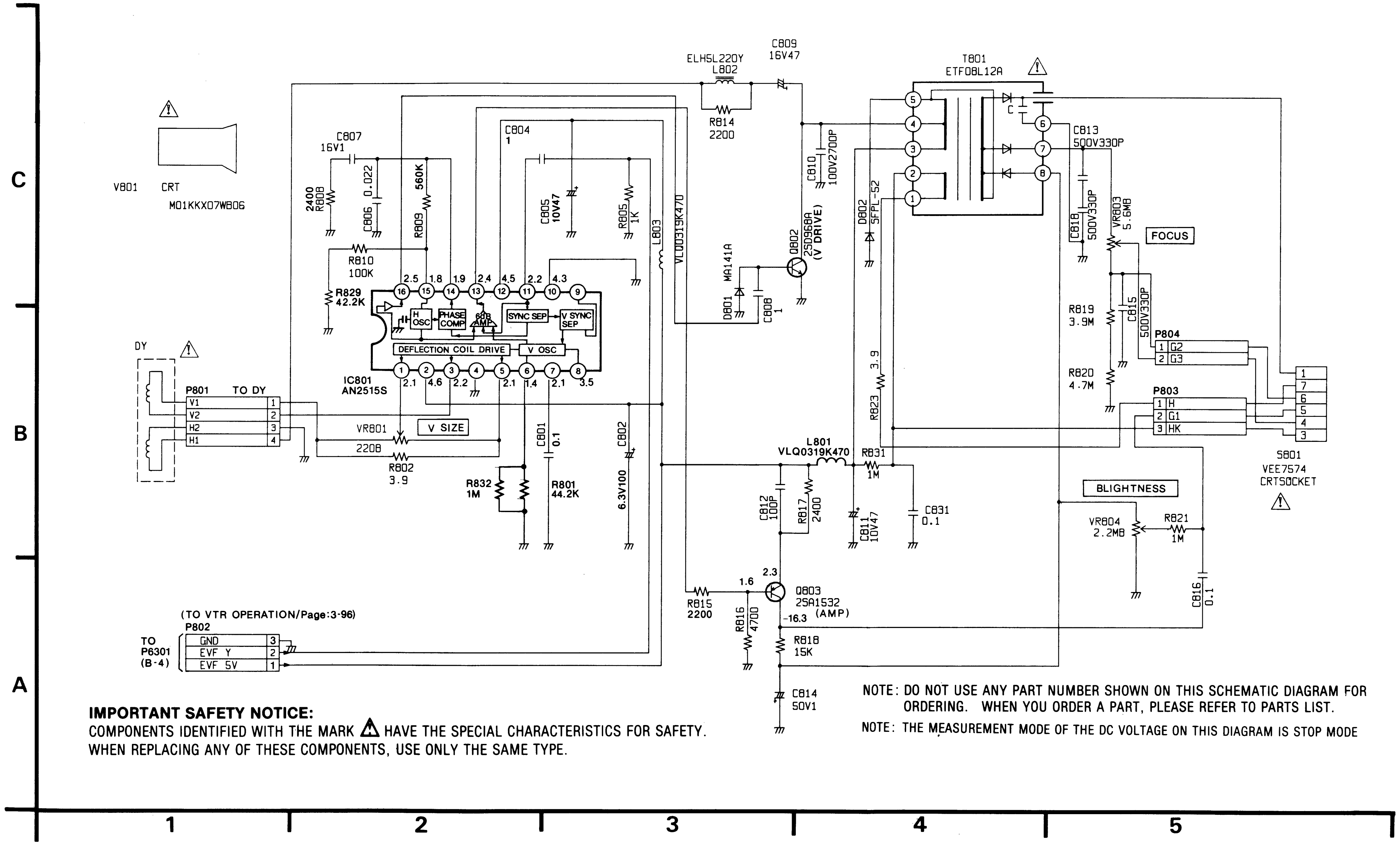

J1001
BATTERY
BATTERY CATCHER
DC IN
BATTERY
C1051
1
2
3
4
C1046
QR1004
QR1005
D1009
Q1005
Q1002
R1026
R1027
QR1002
R1003
R1004
D1008
R1024
C1037
R1025
C1035
C1036
IC1001
24
20
17
25
16
30
32
9
1
5
8
R1017
R1019
C1029
C1030
R1018
C1031
C1032
R1020
C1033
C1034
R1021
R1032
R1033
Q1006
R1023
R1006
R1022
C1004
R1001
C1027
QR1061
SUB OPERATION SECTION
B6501
34
30
25
20
18
1
5
10
17
R1063
R1012
C1024
C1005
C1006
C1043
R1013
C1042
C1011
C1010
R6501
D6503
D6502
L1009
C1019
C1022
D1003
D1005
R1035
D1007
L1004
L1006
L1012
C1020
L1011
L1010
D1006
C1066
Q1004
D1002
D1004
D1064
C1063
R1065
D1062
Q6501
QR6501
C6501
D6501
C1017
C1012
C1001
R1007
Q1001
Q1003
Q1062
POWER SECTION
E
B
C
8
9
10
11
12
13

POWER & SUB OPERATION C.B.A.	
Integrated Circuit	
IC1001	B-10
Transistor	
Q1001	A-12
Q1002	C-10
Q1003	A-12
Q1004	A-12
Q1005	C-10
Q1006	A-10
Q1062	A-13
Q6501	B-13
Transistor & Resistor	
QR1002	C-11
QR1004	C-9
QR1005	C-10
QR1061	C-11
QR6501	B-13
Test Point	
CL1001	C-6
CL1002	D-6
CL1003	A-6
CL1004	A-6
CL1005	A-6
CL1006	C-6
CL1007	B-1
CL1008	B-1
CL1009	B-1
Connector	
B6501	C-12
FP1001	D-5

ADDRESS INFORMATION

3-19. E.V.F. SCHEMATIC DIAGRAM

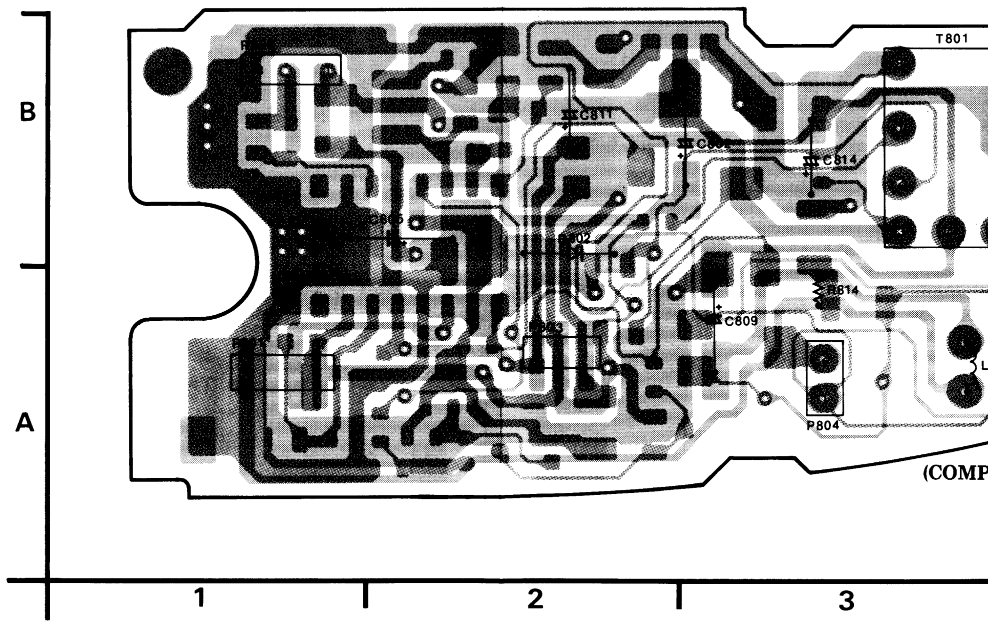
3-20. E.V.F. C.B.A. (VEP28050A)


C
B
A
1
2
3
4
5
V801 CRT
M01KKX07WB06
DY
P801 TO DY
V1
V2
H2
H1
C807 16V1
2400 R808
C806 0.022
560K R809
R810 100K
R829 42.2K
C804 1
C805 10V47
R805 1K
L803 VLQ0319K470
ELH5L220Y L802
R814 2200
C809 16V47
C810 100V2700P
Q802 2SD968A (V DRIVE)
D801 MA141A
C808 1
H OSC
PHASE COMP
60B AMP
SYNC SEP
V SYNC SEP
DEFLECTION COIL DRIVE
V OSC
IC801 AN2515S
VR801 2208
V SIZE
R802 3.9
R832 1M
R801 44.2K
C801 0.1
C802 6.3V100
(TO VTR OPERATION/Page:3-96)
P802
TO P6301 (B-4)
GND
EVF Y
EVF 5V
T801 ETF08L12A
D802 SFPL-52
C813 500V330P
C818 500V330P
VR803 5.6MB
FOCUS
R819 3.9M
C815 500V330P
R820 4.7M
P804
G2
G3
P803
H
G1
HK
S801 VEE7574 CRTSOCKET
R823 3.9
L801 VLQ0319K470
R831 1M
C812 100P
R817 2400
C811 10V47
C831 0.1
BLIGHTNESS
VR804 2.2MB
R821 1M
C816 0.1
R815 2200
R816 4700
Q803 2SA1532 (AMP)
R818 15K
C814 50V1

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE

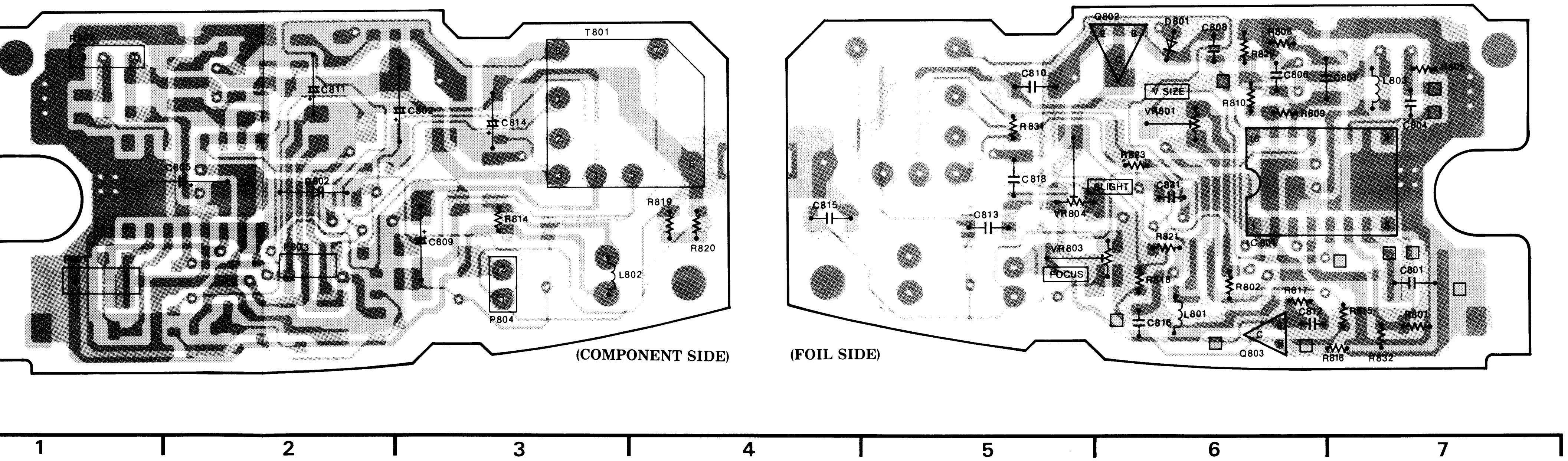

B
A
1
2
3
T801
C811
C814
C609
R814
P804
(COMP

Back Page:
POWER & SUB OPERATION C.B.A. Section

.V.F. C.B.A. (VEP28050A)

E.V.F. C.B.A.	
Integrated Circuit	
IC801	B-7
Transistor	
Q802	B-6
Q803	A-6
Adjustment	
VR801	B-6
VR803	A-5
VR804	B-5
Connector	
P801	A-1
P802	B-1
P803	A-2
P804	A-3

ADDRESS INFORMATION


R802
T801
C811
C802
C814
C805
Q802
R803
C809
R814
R819
R820
L802
P804
Q802
D801
C808
R806
R824
C810
C806
C807
L803
R805
V. SIZE
R810
VR801
R809
C804
R834
C818
R823
C831
BLIGHT
C815
C813
VR804
R821
VR803
FOCUS
IC801
C801
R818
R802
R817
C816
L801
C812
R815
R801
Q803
R816
R832
1
2
3
4
5
6
7

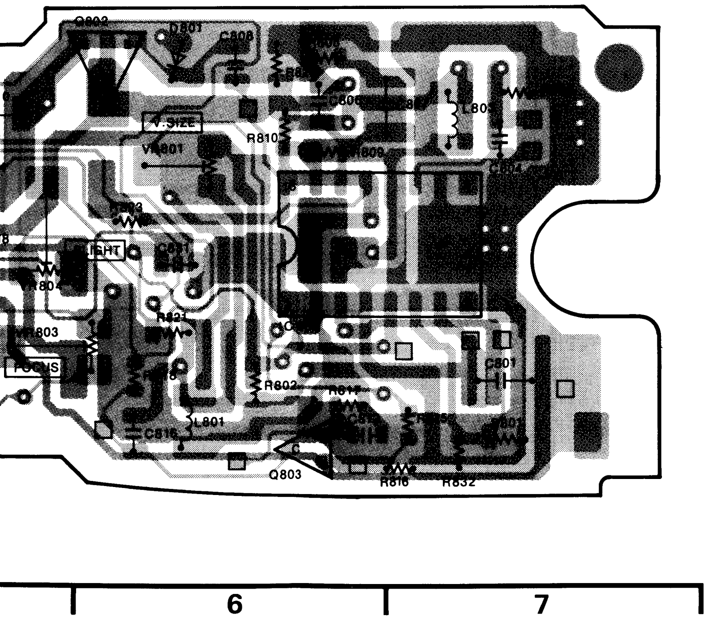
(COMPONENT SIDE) (FOIL SIDE)

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP M

REF. NO.	IC6001															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	4.9	0.1	4.9	4.9	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0
PLAY	4.9	0.1	4.9	5.0	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0
F.F	4.9	0.2	4.8	5.0	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0
REF. NO.	IC6004															
MODE	1	2	3	4	5	6	7	8	9	10						
STOP	0	0	0	0	0	6.7	4.3	0	4.3	6.7						
PLAY	0	0	0	0	0	6.7	4.3	0	4.3	6.7						
F.F	0	0	0	0	0	6.6	4.3	0	4.3	6.6						
REF. NO.	IC6005										IC6006					
MODE	1	2	3								1	2	3			
STOP	0	6.7	5.0								0	4.9	5.0			
PLAY	0	6.7	5.0								0	4.9	5.0			
F.F	0	6.6	5.1								0	4.9	5.1			
REF. NO.	IC6007															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	0	4.9	4.7	4.9	4.9	0.1	4.9	4.9	0	0	4.9	0	0	4.9	4.9	4.9
PLAY	0	5.0	4.8	5.0	5.0	0.1	4.9	4.9	4.9	4.9	4.9	4.5	0	4.9	5.0	4.9
F.F	0	4.8	4.7	4.9	4.4	0.1	4.8	4.9	4.9	4.9	4.9	4.5	5.0	4.9	5.0	3.5
REF. NO.	IC6007															
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
STOP	0	0	2.4	0	4.9	0	0	0.5	0.5	0	4.9	0	4.9	4.9	4.9	4.9
PLAY	0	0	2.5	0	4.9	0	0	0.5	0.5	4.9	4.9	0	4.9	4.9	4.9	4.9
F.F	0	0	2.4	0	4.9	0	0	0.5	0.5	4.9	4.9	0	4.9	4.9	4.9	4.9
REF. NO.	IC6007															
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
STOP	5.0	0	0	0.3	0.8	0.2	0	0	0	0	0	0.8	0	0	4.8	0.8
PLAY	0.1	0	5.0	0.1	0.3	0.3	4.9	4.9	4.6	4.8	4.8	4.8	4.7	4.8	4.9	0.1
F.F	2.1	2.2	1.1	0	0	5.0	0.2	0	0	0	4.9	4.4	4.5	4.7	4.9	2.5
REF. NO.	IC6007															
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76
STOP	0	0	4.9	0	4.9	0	4.9	4.9	2.5	0	4.9	0.2	3.1	0	4.5	4.7
PLAY	0	0	5.0	0	4.9	0	4.9	4.9	2.5	2.5	1.4	4.0	3.2	0	2.4	2.4
F.F	0	0	4.9	0	4.9	0	4.9	4.9	2.4	0.1	1.1	3.1	3.2	0	2.3	2.4
REF. NO.	IC6007															
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
STOP	2.2	2.7	4.9	0	0	0	2.4	2.5	0	2.3	2.4	0	0.1	4.3	4.9	0
PLAY	2.5	2.7	4.9	0	0	0	2.5	2.5	0	2.4	2.5	0	2.2	3.0	4.9	0
F.F	2.4	2.7	4.9	0	0	0	2.5	2.5	0	2.4	2.4	0	2.2	3.0	4.9	0
REF. NO.	IC6007															
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116
STOP	3.0	2.5	0	0	0	0.1	0	0	4.9	4.9	4.9	0	0	0	0	4.9
PLAY	3.0	2.5	0	0	0	0	4.8	0	4.9	4.9	0	0	0	0	0	4.9
F.F	0	2.5	0	0	0	0.1	4.8	0	4.9	4.9	0	0	0	0	0	0
REF. NO.	IC6007															
MODE	121	122	123	124	125	126	127	128								
STOP	4.9	4.9	0	0	0	4.8	0	0								
PLAY	4.9	0	0	0	0	0	4.9	0								
F.F	4.9	4.9	0	0	0	4.9	4.9	0								
REF. NO.	IC6008										IC6009					
MODE	1	2	3	4	5						1	2	3	4	5	6
STOP	4.4	4.4	0	4.9	4.9						0.1	0.8	0.7	0	2.5	0.2
PLAY	0.1	4.5	0	0	4.9						4.1	0.8	0.9	0	2.5	4.6
F.F	4.1	4.1	0	4.9	4.9						3.9	0.9	0.8	0	2.4	4.6
REF. NO.	IC6010															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
STOP	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.2	0	1.6		
PLAY	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.2	0	1.6		
F.F	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.1	0	1.6		

E.V.F. C.B.A.	
Integrated Circuit	
IC801	B-7
Transistor	
Q802 Q803	B-6 A-6
Adjustment	
VR801 VR803 VR804	B-6 A-5 B-5
Connector	
P801 P802 P803 P804	A-1 B-1 A-2 A-3

ADDRESS INFORMATION



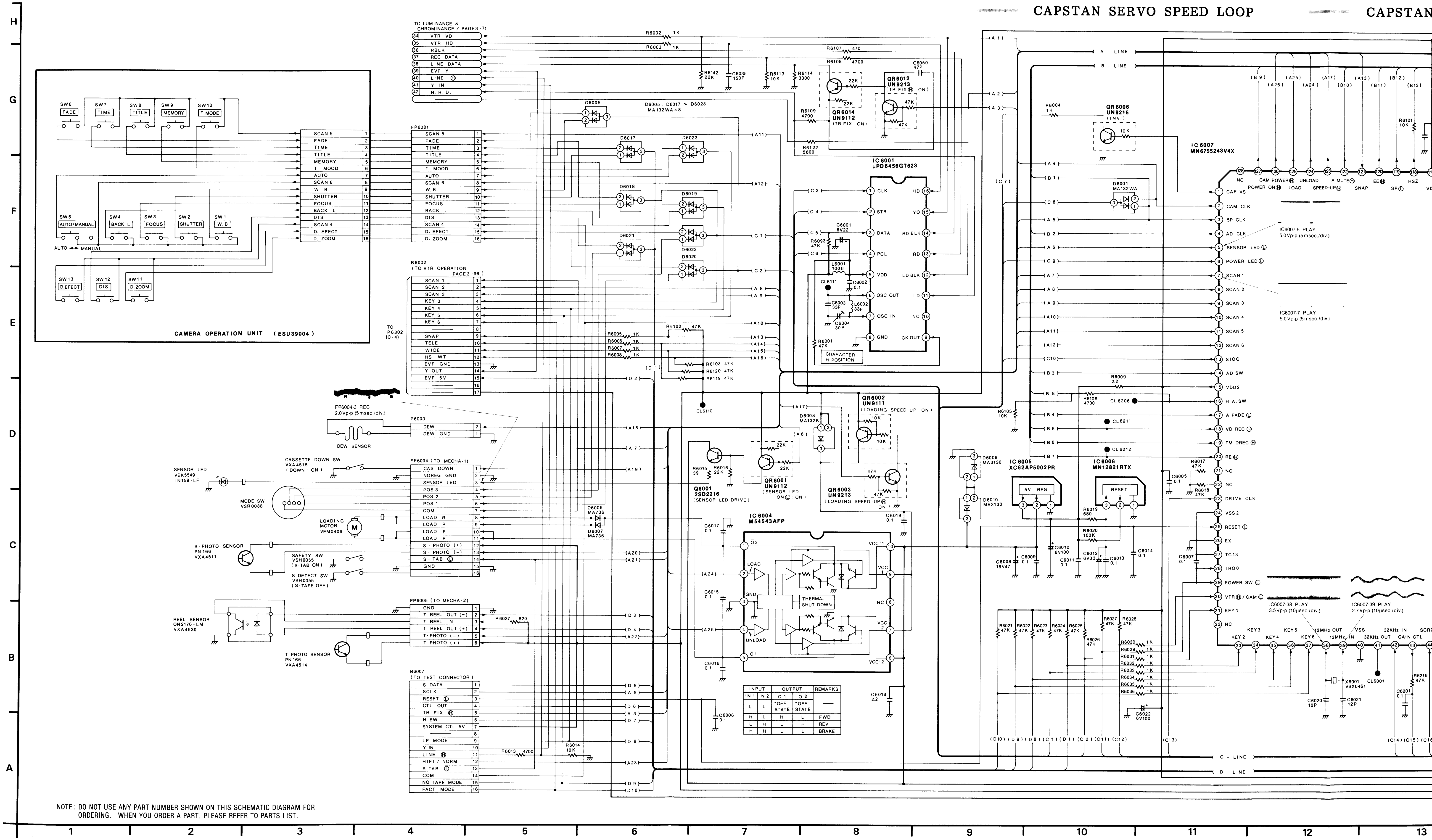
SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	4.9	0.1	4.9	4.9	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0				
PLAY	4.9	0.1	4.9	5.0	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0				
F.F	4.9	0.2	4.8	5.0	4.9	1.8	1.9	0	0.1	0	0.1	0.2	0	0	4.8	4.0				
REF. NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8	9	10										
STOP	0	0	0	0	0	6.7	4.3	0	4.3	6.7										
PLAY	0	0	0	0	0	6.7	4.3	0	4.3	6.7										
F.F	0	0	0	0	0	6.6	4.3	0	4.3	6.6										
REF. NO.	IC6005										IC6006									
MODE	1	2	3								1	2	3							
STOP	0	6.7	5.0								0	4.9	5.0							
PLAY	0	6.7	5.0								0	4.9	5.0							
F.F	0	6.6	5.1								0	4.9	5.1							
REF. NO.	IC6007																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	4.9	4.7	4.9	4.9	0.1	4.9	4.9	0	0	4.9	0	0	4.9	4.9	4.9	4.9	0	0	0
PLAY	0	5.0	4.8	5.0	5.0	0.1	4.9	4.9	4.9	4.9	4.9	4.5	0	4.9	5.0	4.9	4.9	0	0	0
F.F	0	4.8	4.7	4.9	4.4	0.1	4.8	4.9	4.9	4.9	4.9	4.5	5.0	4.9	5.0	3.5	4.9	0	0	0
REF. NO.	IC6007																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	2.4	0	4.9	0	0	0.5	0.5	0	4.9	0	4.9	4.9	4.9	4.9	4.9	2.3	0	0
PLAY	0	0	2.5	0	4.9	0	0	0.5	0.5	4.9	4.9	0	4.9	4.9	4.9	4.9	4.9	2.4	2.3	1.0
F.F	0	0	2.4	0	4.9	0	0	0.5	0.5	4.9	4.9	0	4.9	4.9	4.9	4.9	4.9	2.3	2.3	0
REF. NO.	IC6007																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	5.0	0	0	0.3	0.8	0.2	0	0	0	0	0	0.8	0	0	4.8	0.8	4.9	2.5	4.9	4.9
PLAY	0.1	0	5.0	0.1	0.3	0.3	4.9	4.9	4.6	4.8	4.8	4.8	4.7	4.8	4.9	0.1	4.9	0	5.0	5.0
F.F	2.1	2.2	1.1	0	0	5.0	0.2	0	0	0	4.9	4.4	4.5	4.7	4.9	2.5	4.9	0	5.0	5.0
REF. NO.	IC6007																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	4.9	0	4.9	0	4.9	4.9	2.5	0	4.9	0.2	3.1	0	4.5	4.7	0	0	2.5	2.4
PLAY	0	0	5.0	0	4.9	0	4.9	4.9	2.5	2.5	1.4	4.0	3.2	0	2.4	2.4	0.1	0	2.5	2.4
F.F	0	0	4.9	0	4.9	0	4.9	4.9	2.4	0.1	1.1	3.1	3.2	0	2.3	2.4	0.2	0	2.5	2.5
REF. NO.	IC6007																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	2.2	2.7	4.9	0	0	0	2.4	2.5	0	2.3	2.4	0	0.1	4.3	4.9	0	4.9	0	4.9	0
PLAY	2.5	2.7	4.9	0	0	0	2.5	2.5	0	2.4	2.5	0	2.2	3.0	4.9	0	4.9	0	4.9	3.9
F.F	2.4	2.7	4.9	0	0	0	2.5	2.5	0	2.4	2.4	0	2.2	3.0	4.9	0	4.9	0	4.9	0
REF. NO.	IC6007																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	3.0	2.5	0	0	0	0.1	0	0	4.9	4.9	4.9	0	0	0	0	4.9	4.9	0	0	0
PLAY	3.0	2.5	0	0	0	0	4.8	0	4.9	4.9	0	0	0	0	0	4.9	5.0	4.9	0	0
F.F	0	2.5	0	0	0	0.1	4.8	0	4.9	4.9	0	0	0	0	0	0	5.0	5.0	0	0
REF. NO.	IC6007																			
MODE	121	122	123	124	125	126	127	128												
STOP	4.9	4.9	0	0	0	4.8	0	0												
PLAY	4.9	0	0	0	0	0	4.9	0												
F.F	4.9	4.9	0	0	0	4.9	4.9	0												
REF. NO.	IC6008										IC6009									
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8		
STOP	4.4	4.4	0	4.9	4.9						0.1	0.8	0.7	0	2.5	0.2	3.2	0		
PLAY	0.1	4.5	0	0	4.9						4.1	0.8	0.9	0	2.5	4.6	3.2	4.9		
F.F	4.1	4.1	0	4.9	4.9						3.9	0.9	0.8	0	2.4	4.6	3.2	4.9		
REF. NO.	IC6010																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.2	0	1.6						
PLAY	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.2	0	1.6						
F.F	0	2.2	0	0	0.4	0.7	0	1.6	1.6	4.9	0	1.1	0	1.6						

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

REF. NO.	Q6001			Q6002						Q6006								
MODE	E	C	B	1	2	3	4	5	6	1	2	3	4	5	6			
STOP	0.1	6.7	0	0	0	0	0	0.1	0.1	0	0.6	4.7	0	0.1	0.1			
PLAY	0	6.7	0	0	0.6	0.7	0	0.1	0.1	0	0.6	4.7	0	0.1	0.1			
F.F	0.8	6.5	0.6	0	0.6	4.4	0	0.2	0.1	0	0.6	4.8	0	0.1	0.1			
REF. NO.	Q6007						Q6201											
MODE	1	2	3	4	5	6	E	C	B									
STOP	0	0	0.1	0	0.6	4.2	4.9	4.9	4.3									
PLAY	0	0.1	0.1	0	0.6	4.7	5.0	4.9	4.3									
F.F	0	0.1	0.1	0	0.5	4.3	5.0	4.9	4.4									
REF. NO.	QR6001			QR6002			QR6003			QR6004			QR6005			QR6006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.9	0	4.9	4.9	4.3	4.9	0	0	0	4.9	4.8	0.1	0	0.1	4.9	0	6.7	0
PLAY	4.9	0	5.0	4.9	4.3	4.9	0	4.9	0	4.9	4.8	0.1	0	0.1	4.9	5.0	4.7	4.7
F.F	4.9	0.6	4.9	4.9	4.3	4.9	0	4.9	0	4.9	4.8	0.1	0	0.1	4.9	0	5.3	0
REF. NO.	QR6007			QR6008						QR6009			QR6010					
MODE	E	C	B	1	2	3	4	5	6	E	C	B	E	C	B			
STOP	4.9	4.9	4.9	4.9	4.2	4.9	0	4.2	4.9	0	2.6	1.1	0	4.9	0			
PLAY	4.9	4.9	4.9	4.9	4.3	4.9	4.9	4.2	0	0	0.1	1.2	0	4.9	0			
F.F	4.9	4.9	4.9	4.9	4.2	4.9	4.9	4.2	4.9	4.9	4.3	4.9	0	4.9	0			
REF. NO.	QR6011						QR6012			QR6013			QR6014					
MODE	1	2	3	4	5		E	C	B	E	C	B	E	C	B			
STOP	1.6	1.6	0	0	0		0	0.1	0	0	4.9	0	0.1	0.2	0.1			
PLAY	1.6	1.6	0	0	0		0	0.1	0	0	4.9	0	0.1	0.2	0.1			
F.F	1.6	1.6	0	0	0		0	0.1	0	0	4.9	0	0.1	0.2	0.1			

3-21. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM

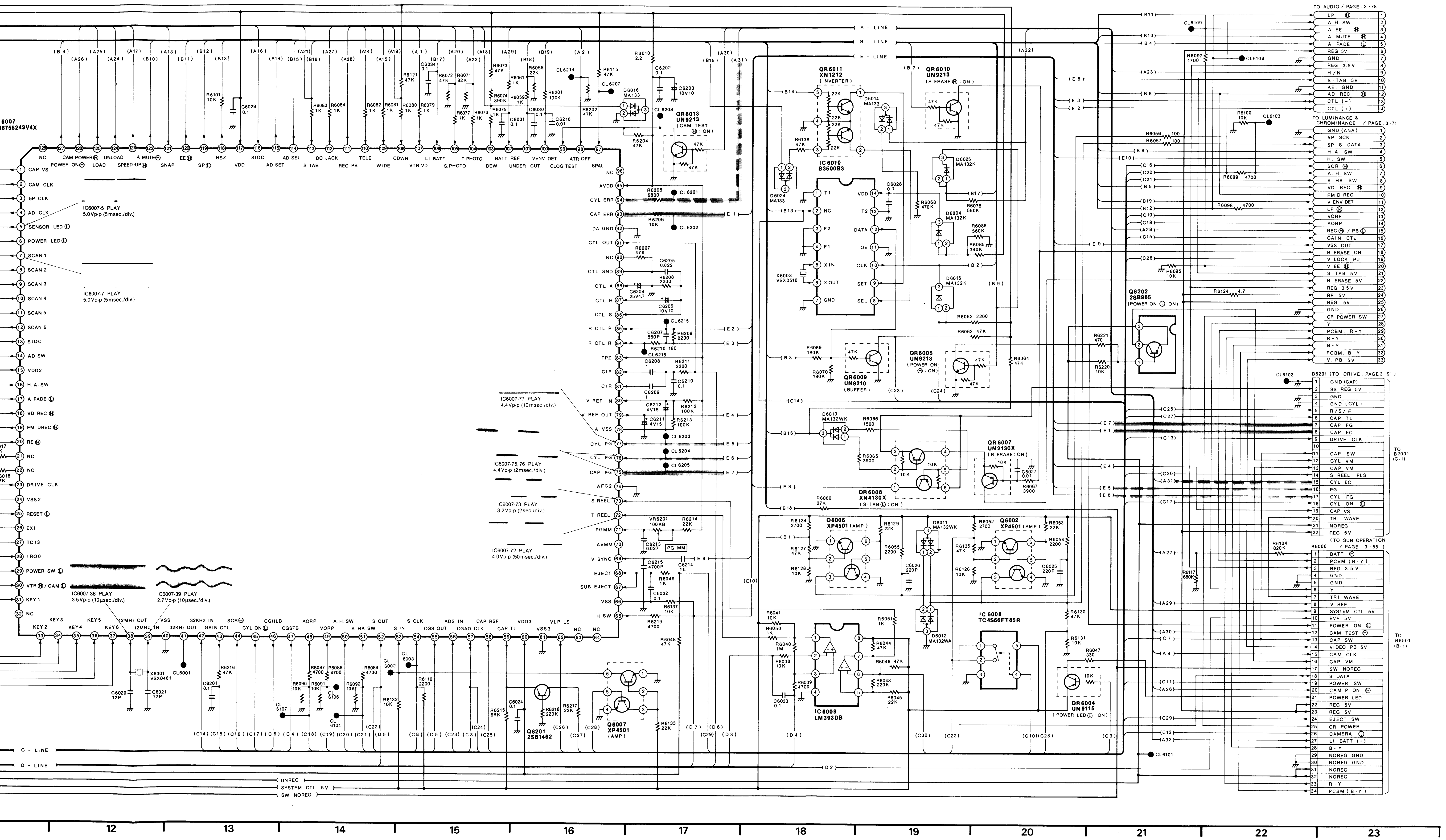


CAPSTAN SERVO SPEED LOOP
CAPSTAN
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
CAMERA OPERATION UNIT (ESU39004)
SW6 FADE
SW7 TIME
SW8 TITLE
SW9 MEMORY
SW10 T.MODE
SW5 AUTO/MANUAL
SW4 BACK.L
SW3 FOCUS
SW2 SHUTTER
SW1 W.B.
AUTO ↔ MANUAL
SW13 D.EFECT
SW12 DIS
SW11 D.ZOOM
TO LUMINANCE & CHROMINANCE / PAGE 3-71
VTR VD
VTR HD
RBLK
REC DATA
LINE DATA
EVF Y
LINE Ⓗ
Y IN
N.R.D.
FP6001
SCAN 5
FADE
TIME
TITLE
MEMORY
T. MOOD
AUTO
SCAN 6
W.B.
SHUTTER
FOCUS
BACK. L
DIS
SCAN 4
D. EFECT
D. ZOOM
D6005, D6017 ~ D6023 MA132WA × 8
B6002 (TO VTR OPERATION PAGE 3-96)
SCAN 1
SCAN 2
SCAN 3
KEY 3
KEY 4
KEY 5
KEY 6
SNAP
TELE
WIDE
HS · WT
EVF GND
Y OUT
EVF 5V
TO P6302 (C-4)
FP6004-3 REC 2.0Vp-p (5msec./div.)
P6003
DEW
DEW GND
DEW SENSOR
CASSETTE DOWN SW VXA4515 (DOWN : ON)
SENSOR LED VEK5549 LN159 · LF
MODE SW VSR0088
LOADING MOTOR VEM0406
S-PHOTO SENSOR PN166 VXA4511
SAFETY SW VSH0055 (S-TAB ON)
S DETECT SW VSH0055 (S-TAPE OFF)
REEL SENSOR ON2170-LM VXA4530
T-PHOTO SENSOR PN166 VXA4514
FP6004 (TO MECHA-1)
CAS DOWN
NOREG GND
SENSOR LED
POS 3
POS 2
POS 1
COM
LOAD R
LOAD F
S · PHOTO (+)
S · PHOTO (-)
S · TAB Ⓛ
GND
FP6005 (TO MECHA-2)
T REEL OUT (-)
T REEL IN
T REEL OUT (+)
T · PHOTO (-)
T · PHOTO (+)
B6007 (TO TEST CONNECTOR)
S DATA
SCLK
RESET Ⓛ
CTL OUT
TR FIX Ⓗ
H SW
SYSTEM CTL 5V
LP MODE
Y IN
LINE Ⓗ
HIFI / NORM
S TAB Ⓛ
COM
NO TAPE MODE
FACT MODE
D6006 MA736
D6007 MA736
IC6001 μPD6456GT623
CLK
STB
DATA
PCL
VDD
OSC OUT
OSC IN
GND
HD
YO
RD BLK
RD
LD BLK
LD
NC
CK OUT
CHARACTER H · POSITION
QR6012 UN9213 (TR FIX Ⓗ ON)
QR6014 UN9112 (TR FIX ON)
QR6002 UN9111 (LOADING SPEED UP : ON)
QR6001 UN9112 (SENSOR LED ON Ⓛ : ON)
QR6003 UN9213 (LOADING SPEED UP Ⓗ ON)
Q6001 2SD2216 (SENSOR LED DRIVE)
D6008 MA132K
D6009 MA3130
D6010 MA3130
IC6004 M54543AFP
LOAD
UNLOAD
THERMAL SHUT DOWN
IC6005 XC62AP5002PR
5V REG
IC6006 MN12821RTX
RESET
QR6006 UN9215 (INV)
D6001 MA132WA
IC6007 MN6755243V4X
A - LINE
B - LINE
C - LINE
D - LINE
CAP VS
CAM CLK
SP CLK
AD CLK
SENSOR LED Ⓛ
POWER LED Ⓛ
SCAN 1
SCAN 2
SCAN 3
SCAN 4
SCAN 5
SCAN 6
SIOC
AD SW
VDD2
H.A.SW
A FADE Ⓛ
VD REC Ⓗ
FM DREC Ⓗ
RE Ⓗ
NC
DRIVE CLK
VSS2
RESET Ⓛ
EXI
TC13
IRQ0
POWER SW Ⓛ
VTR Ⓗ / CAM Ⓛ
KEY 1
KEY 2
KEY 3
KEY 4
KEY 5
KEY 6
12MHz OUT
12MHz IN
VSS
32KHz IN
32KHz OUT
GAIN CTL
CAM POWER Ⓗ
POWER ON Ⓗ
UNLOAD
LOAD
A MUTE Ⓗ
SPEED-UP Ⓗ
SNAP
EE Ⓗ
HSZ
SP Ⓛ
IC6007-5 PLAY 5.0Vp-p (5msec./div.)
IC6007-7 PLAY 5.0Vp-p (5msec./div.)
IC6007-38 PLAY 3.5Vp-p (10μsec./div.)
IC6007-39 PLAY 2.7Vp-p (10μsec./div.)
X6001 VSX0461
CL6001
CL6110
CL6111
CL6206
CL6211
CL6212
L6001 100μ
L6002 33μ

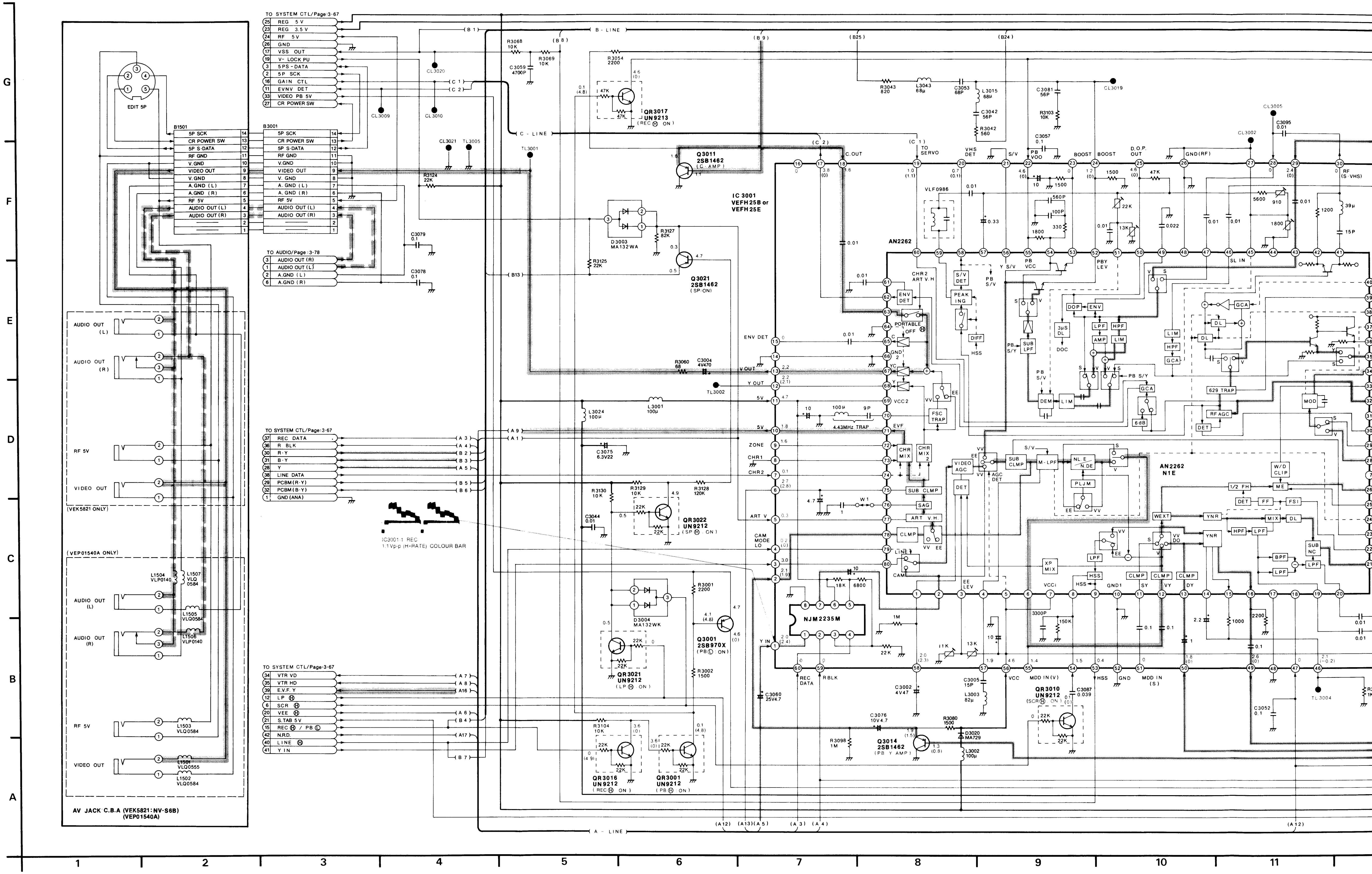
INPUT		OUTPUT		REMARKS
IN 1	IN 2	$\bar{O}$ 1	$\bar{O}$ 2	
L	L	"OFF" STATE	"OFF" STATE	—
H	L	H	L	FWD
L	H	L	H	REV
H	H	L	L	BRAKE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

D LOOP CAPSTAN SERVO PHASE LOOP CYLINDER SERVO SPEED LOOP CYLINDER SERVO PHASE LOOP


6007
18755243V4X
A - LINE
B - LINE
E - LINE
C - LINE
D - LINE
UNREG
SYSTEM CTL 5V
SW NOREG
QR6011 XN1212 (INVERTER)
QR6010 UN9213 (R ERASE Ⓗ : ON)
QR6013 UN9213 (CAM TEST Ⓗ : ON)
IC6010 S3500B3
X6003 VSX0510
QR6005 UN9213 (POWER ON Ⓗ : ON)
QR6009 UN9210 (BUFFER)
Q6202 2SB965 (POWER ON Ⓛ : ON)
QR6007 UN2130X (R-ERASE : ON)
QR6008 XN4130X (S-TAB Ⓛ : ON)
Q6006 XP4501 (AMP)
Q6002 XP4501 (AMP)
IC6008 TC4S66FT85R
IC6009 LM393DB
QR6004 UN9115 (POWER LED Ⓛ : ON)
Q6007 XP4501 (AMP)
Q6201 2SB1462
X6001 VSX0461
IC6007-5 PLAY 5.0Vp-p (5msec./div.)
IC6007-7 PLAY 5.0Vp-p (5msec./div.)
IC6007-77 PLAY 4.4Vp-p (10msec./div.)
IC6007-75,76 PLAY 4.4Vp-p (2msec./div.)
IC6007-73 PLAY 3.2Vp-p (2sec./div.)
IC6007-72 PLAY 4.0Vp-p (50msec./div.)
IC6007-38 PLAY 3.5Vp-p (10μsec./div.)
IC6007-39 PLAY 2.7Vp-p (10μsec./div.)
TO AUDIO / PAGE : 3-78
TO LUMINANCE & CHROMINANCE / PAGE : 3-71
B6201 (TO DRIVE : PAGE 3-91)
TO B2001 (C-1)
B6006 (TO SUB OPERATION / PAGE : 3-55)
TO B6501 (B-1)
12
13
14
15
16
17
18
19
20
21
22
23

3-22. LUMINANCE/CHROMINANCE & HEAD AMP SCHEMATIC DIAGRAM


TO SYSTEM CTL/Page 3-67
REG 5V
REG 3.5V
RF 5V
GND
VSS OUT
V- LOCK PU
5PS-DATA
5P SCK
GAIN CTL
EVNV DET
VIDEO PB 5V
CR POWER SW
EDIT 5P
B1501
B3001
5P SCK
CR POWER SW
5P S-DATA
RF GND
V.GND
VIDEO OUT
A.GND (L)
A.GND (R)
RF 5V
AUDIO OUT (L)
AUDIO OUT (R)
TO AUDIO/Page 3-78
B-LINE
C-LINE
A-LINE
Q3011 2SB1462 (C. AMP)
Q3021 2SB1462 (SP ON)
QR3017 UN9213
D3003 MA132WA
D3004 MA132WK
IC 3001 VEFH25B or VEFH25E
AN2262
AN2262 N1E
NJM2235M
QR3022 UN9212
QR3021 UN9212
Q3001 2SB970X
QR3016 UN9212
QR3001 UN9212
Q3014 2SB1462 (PB Y AMP)
QR3010 UN9212
4.43MHz TRAP
IC3001-1 REC 1.1Vp-p (H-RATE) COLOUR BAR
TO SYSTEM CTL/Page 3-67
REC DATA
R BLK
R-Y
B-Y
Y
LINE DATA
PCBM(R-Y)
PCBM(B-Y)
GND (ANA)
VTR VD
VTR HD
E.V.F. Y
LP
SCR
VEE
S.TAB 5V
REC / PB
N.R.D.
LINE
Y IN
AUDIO OUT (L)
AUDIO OUT (R)
RF 5V
VIDEO OUT
(VEK5821 ONLY)
(VEP01540A ONLY)
AV JACK C.B.A (VEK5821: NV-S6B) (VEP01540A)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

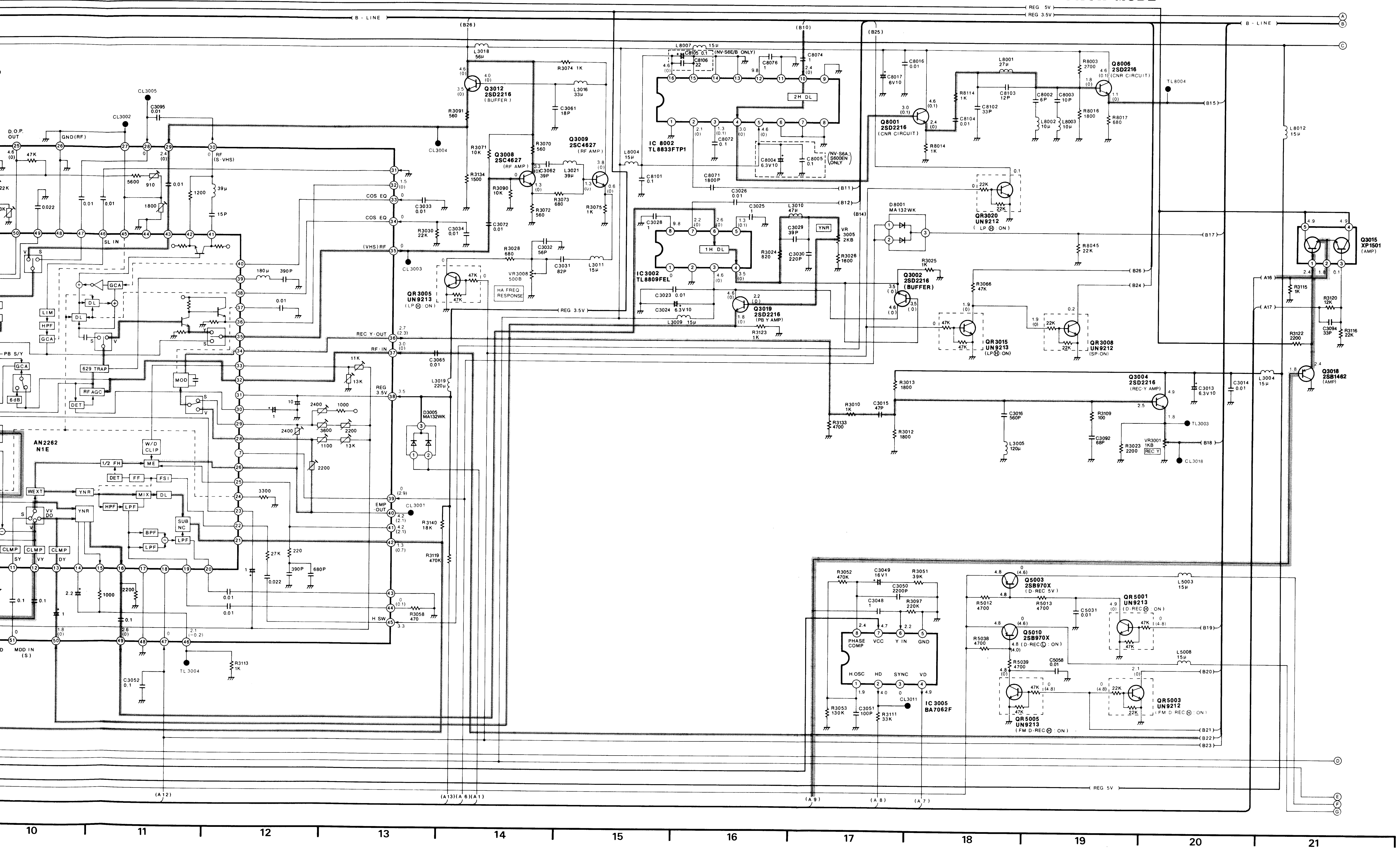
Back Page:
SYSTEM CTL & SERVO Section

VIDEO MAIN SIGNAL PATH IN REC MODE

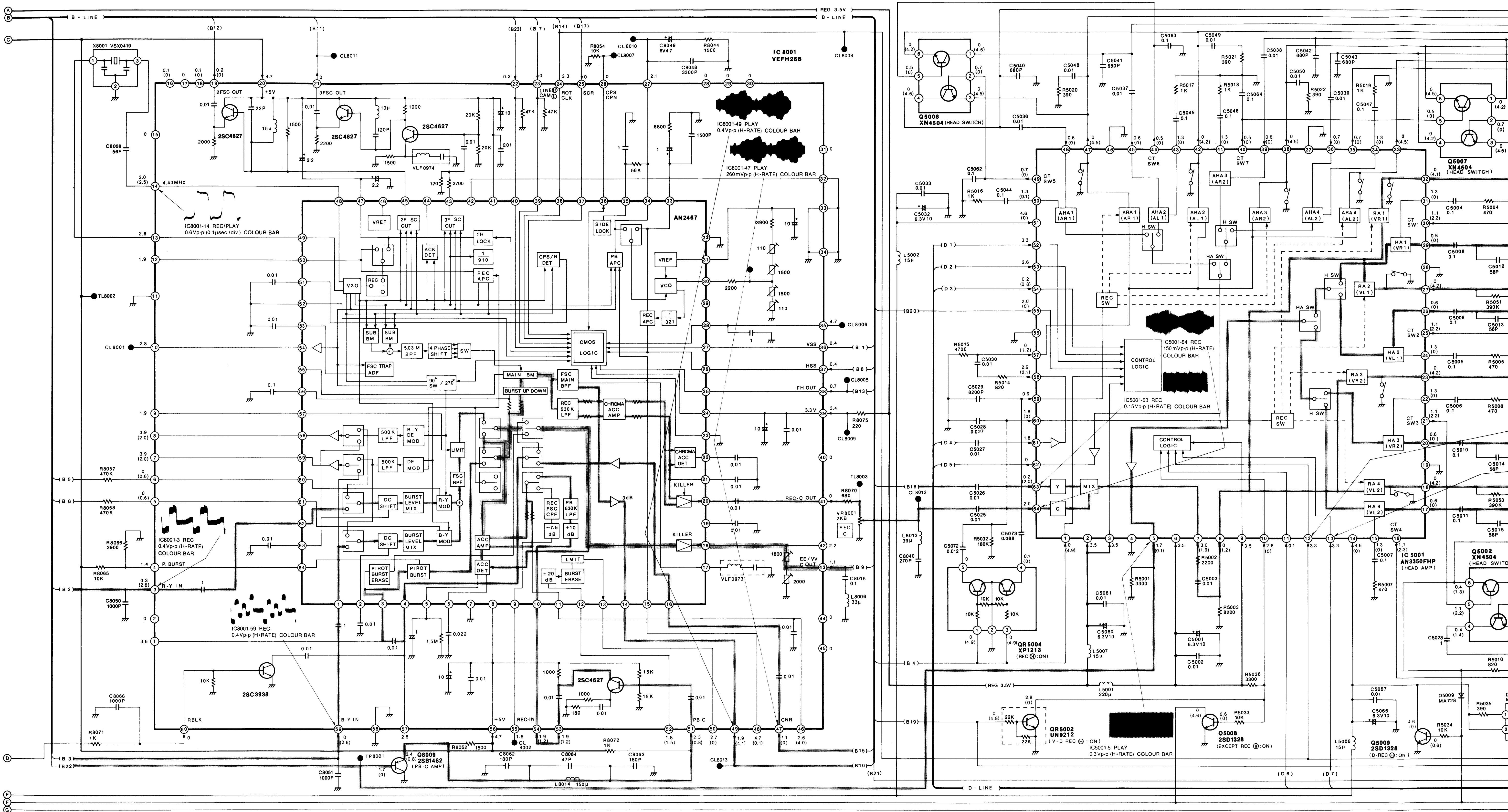
AUDIO MAIN SIGNAL PATH IN REC MODE

VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



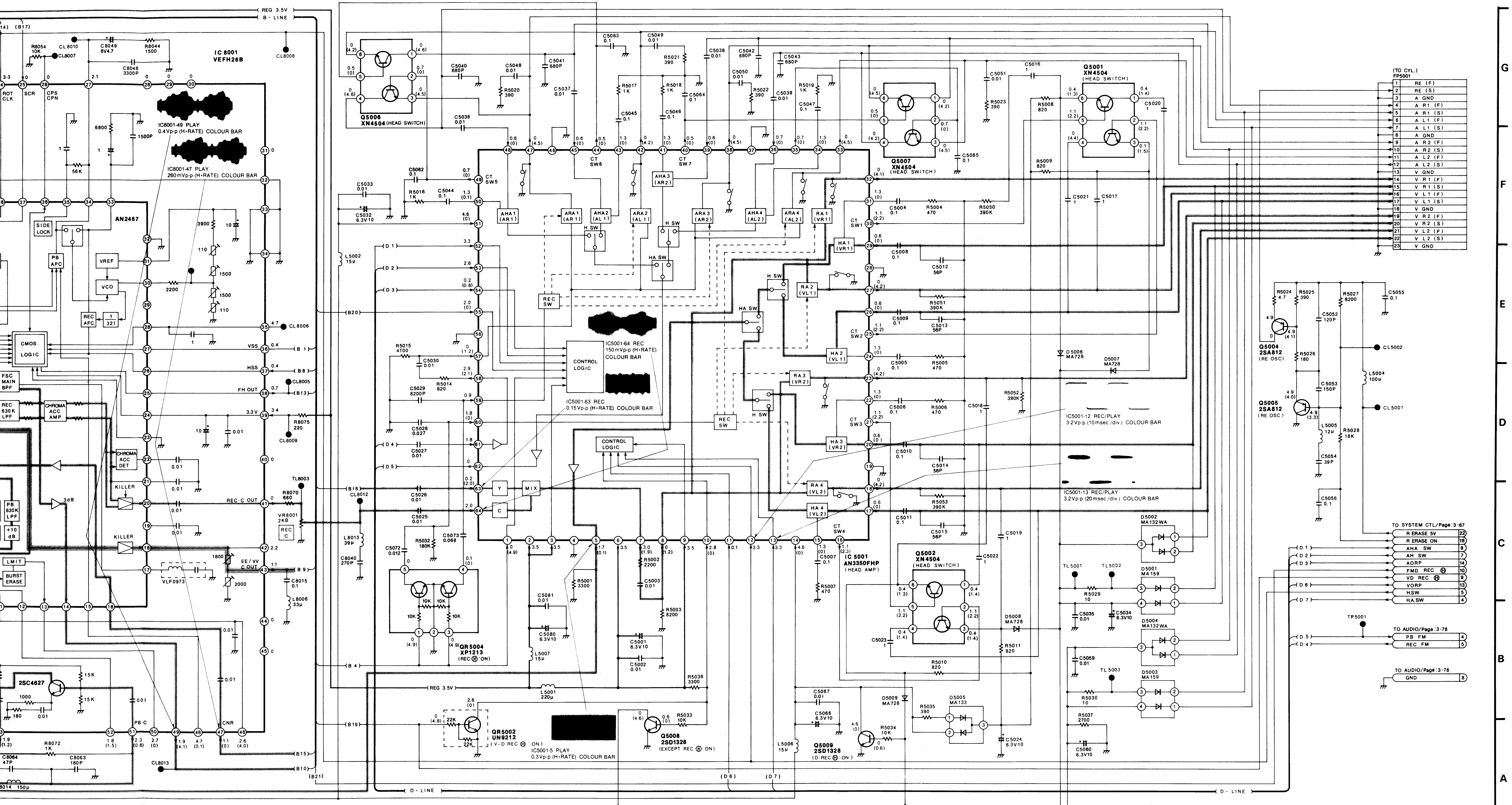
B - LINE
REG 5V
REG 3.5V
Q3012 2SD2216 (BUFFER)
Q3008 2SC4627 (RF AMP)
Q3009 2SC4627 (RF AMP)
IC 8002 TL8833FTP1
2H DL
1H DL
IC3002 TL8809FEL
Q3019 2SD2216 (PB Y AMP)
QR3005 UN9213 (LP Ⓗ: ON)
HA FREQ RESPONSE
Q8001 2SD2216 (CNR CIRCUIT)
Q8006 2SD2216 (CNR CIRCUIT)
D8001 MA132WK
QR3020 UN9212 (LP Ⓗ: ON)
Q3002 2SD2216 (BUFFER)
QR3015 UN9213 (LP Ⓗ: ON)
QR3008 UN9212 (SP: ON)
Q3015 XP1501 (AMP)
Q3018 2SB1462 (AMP)
Q3004 2SD2216 (REC Y AMP)
AN2262 N1E
D3005 MA132WK
YNR
COS EQ
(VHS) RF
REC Y OUT
RF-IN
EMP OUT
H SW
IC 3005 BA7062F
PHASE COMP
VCC
Y IN
GND
H.OSC
HD
SYNC
VD
Q5003 2SB970X (D-REC 5V)
QR5001 UN9213 (D-REC Ⓗ: ON)
Q5010 2SB970X (D-REC Ⓛ: ON)
QR5005 UN9213 (FM D-REC Ⓗ: ON)
QR5003 UN9212 (FM D-REC Ⓗ: ON)
10
11
12
13
14
15
16
17
18
19
20
21


IC 8001
VEFH26B
AN2467
X8001 VSX0419
2SC4627
2SC3938
Q8009
2SB1462
(PB-C AMP)
IC8001-14 REC/PLAY
0.6Vp-p (0.1μsec./div.) COLOUR BAR
IC8001-49 PLAY
0.4Vp-p (H-RATE) COLOUR BAR
IC8001-47 PLAY
260mVp-p (H-RATE) COLOUR BAR
IC8001-3 REC
0.4Vp-p (H-RATE)
COLOUR BAR
IC8001-59 REC
0.4Vp-p (H-RATE) COLOUR BAR
CMOS
LOGIC
B-LINE
REG 3.5V
D-LINE
Q5006
XN4504 (HEAD SWITCH)
Q5007
XN4504
(HEAD SWITCH)
IC 5001
AN3350FHP
(HEAD AMP)
Q5002
XN4504
(HEAD SWITC
QR5004
XP1213
(REC Ⓗ:ON)
QR5002
UN9212
(V-D REC Ⓗ ON)
Q5008
2SD1328
(EXCEPT REC Ⓗ ON)
Q5009
2SD1328
(D-REC Ⓗ:ON)
IC5001-64 REC
150mVp-p (H-RATE)
COLOUR BAR
IC5001-63 REC
0.15Vp-p (H-RATE) COLOUR BAR
IC5001-5 PLAY
0.3Vp-p (H-RATE) COLOUR BAR
CONTROL
LOGIC

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

22 23 24 25 26 27 28 29 30 31 32 33 34


REG 3.5V
B - LINE
IC 8001
VEFH26B
CL8008
R8054 10K
CL8010
CL8007
C8049 6V4.7
R8044 1500
C8048 3300P
ROT CLK
SCR
CPS CPN
IC8001-49 PLAY
0.4Vp-p (H-RATE) COLOUR BAR
IC8001-47 PLAY
260mVp-p (H-RATE) COLOUR BAR
AN2467
SIDE LOCK
PB APC
VREF
VCO
REC AFC
CMOS LOGIC
FSC MAIN BPF
REC 630K LPF
CHROMA ACC AMP
CHROMA ACC DET
KILLER
PB 630K LPF
+10 dB
LMIT
BURST ERASE
3dB
VSS
HSS
FH OUT
3.3V
REC-C OUT
EE/VV C OUT
VLF0973
CL8006
CL8005
CL8009
TL8003
R8070 680
VR8001 2KB
REC C
R8075 220
C8015 0.1
L8006 33μ
2SC4627
CNR
PB-C
CL8013
C8064 47P
R8072 1K
C8063 180P
Q5006
XN4504 (HEAD SWITCH)
Q5007
XN4504
(HEAD SWITCH)
Q5001
XN4504
(HEAD SWITCH)
Q5002
XN4504
(HEAD SWITCH)
IC 5001
AN3350FHP
(HEAD AMP)
CT SW5
CT SW6
CT SW7
CT SW1
CT SW2
CT SW3
CT SW4
AHA 1 (AR 1)
ARA 1 (AR 1)
AHA 2 (AL 1)
ARA 2 (AL 1)
AHA 3 (AR 2)
ARA 3 (AR 2)
AHA 4 (AL 2)
ARA 4 (AL 2)
RA 1 (VR 1)
HA 1 (VR 1)
RA 2 (VL 1)
HA 2 (VL 1)
RA 3 (VR 2)
HA 3 (VR 2)
RA 4 (VL 2)
HA 4 (VL 2)
H SW
HA SW
REC SW
CONTROL LOGIC
Y
MIX
C
IC5001-64 REC
150mVp-p (H-RATE)
COLOUR BAR
IC5001-63 REC
0.15Vp-p (H-RATE) COLOUR BAR
IC5001-12 REC/PLAY
3.2Vp-p (10msec./div.) COLOUR BAR
IC5001-13 REC/PLAY
3.2Vp-p (20msec./div.) COLOUR BAR
IC5001-5 PLAY
0.3Vp-p (H-RATE) COLOUR BAR
QR5004
XP1213
(REC Ⓡ : ON)
QR5002
UN9212
(V-D REC Ⓡ : ON)
Q5008
2SD1328
(EXCEPT REC Ⓡ : ON)
Q5009
2SD1328
(D-REC Ⓡ : ON)
Q5004
2SA812
(RE OSC)
Q5005
2SA812
(RE OSC)
L5007 15μ
L5001 220μ
L5002 15μ
L5006 15μ
L8013 39μ
C8040 270P
D5006 MA728
D5007 MA728
D5008 MA728
D5009 MA728
D5005 MA133
D5002 MA132WA
D5001 MA159
D5004 MA132WA
D5003 MA159
TL5001
TL5002
TL 5003
TP5001
CL5002
CL5001
L5004 100μ
L5005 12μ
R5028 18K
(TO CYL.)
FP5001
1 RE (F)
2 RE (S)
3 A GND
4 A R1 (F)
5 A R1 (S)
6 A L1 (F)
7 A L1 (S)
8 A GND
9 A R2 (F)
10 A R2 (S)
11 A L2 (F)
12 A L2 (S)
13 V GND
14 V R1 (F)
15 V R1 (S)
16 V L1 (F)
17 V L1 (S)
18 V GND
19 V R2 (F)
20 V R2 (S)
21 V L2 (F)
22 V L2 (S)
23 V GND
TO SYSTEM CTL/Page 3-67
R ERASE 5V 22
R ERASE ON 18
AHA SW 6
AH SW 7
AORP 14
FMD REC Ⓡ 10
VD REC Ⓡ 9
VORP 13
H.SW 5
HA.SW 4
TO AUDIO/Page 3-78
PB FM 4
REC FM 5
TO AUDIO/Page 3-78
GND 8
D - LINE
REG 3.5V
G
F
E
D
C
B
A

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

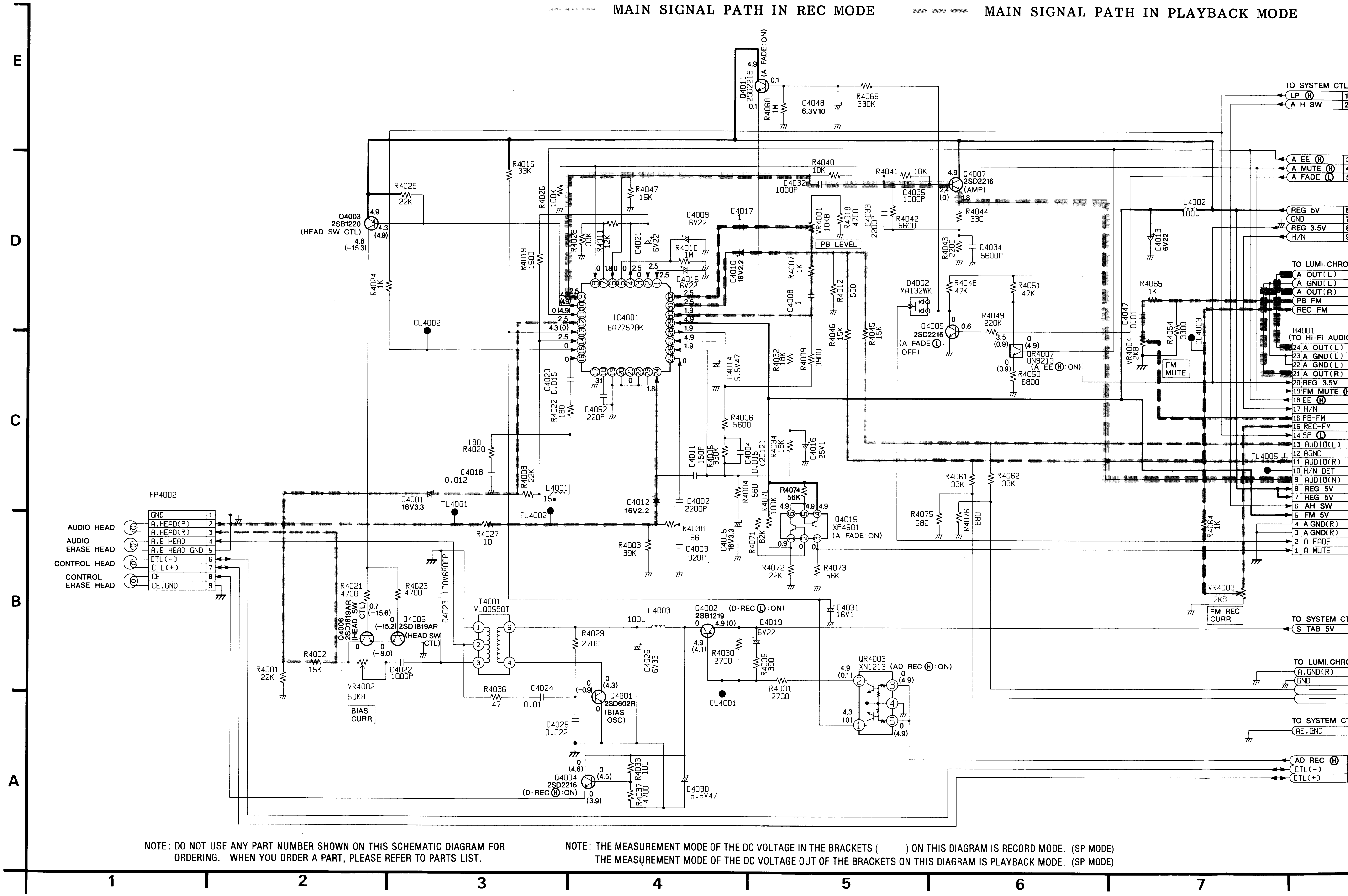
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

27 28 29 30 31 32 33 34 35 36 37 38

Next Page:
AUDIO Section

3-23. AUDIO SCHEMATIC DIAGRAM

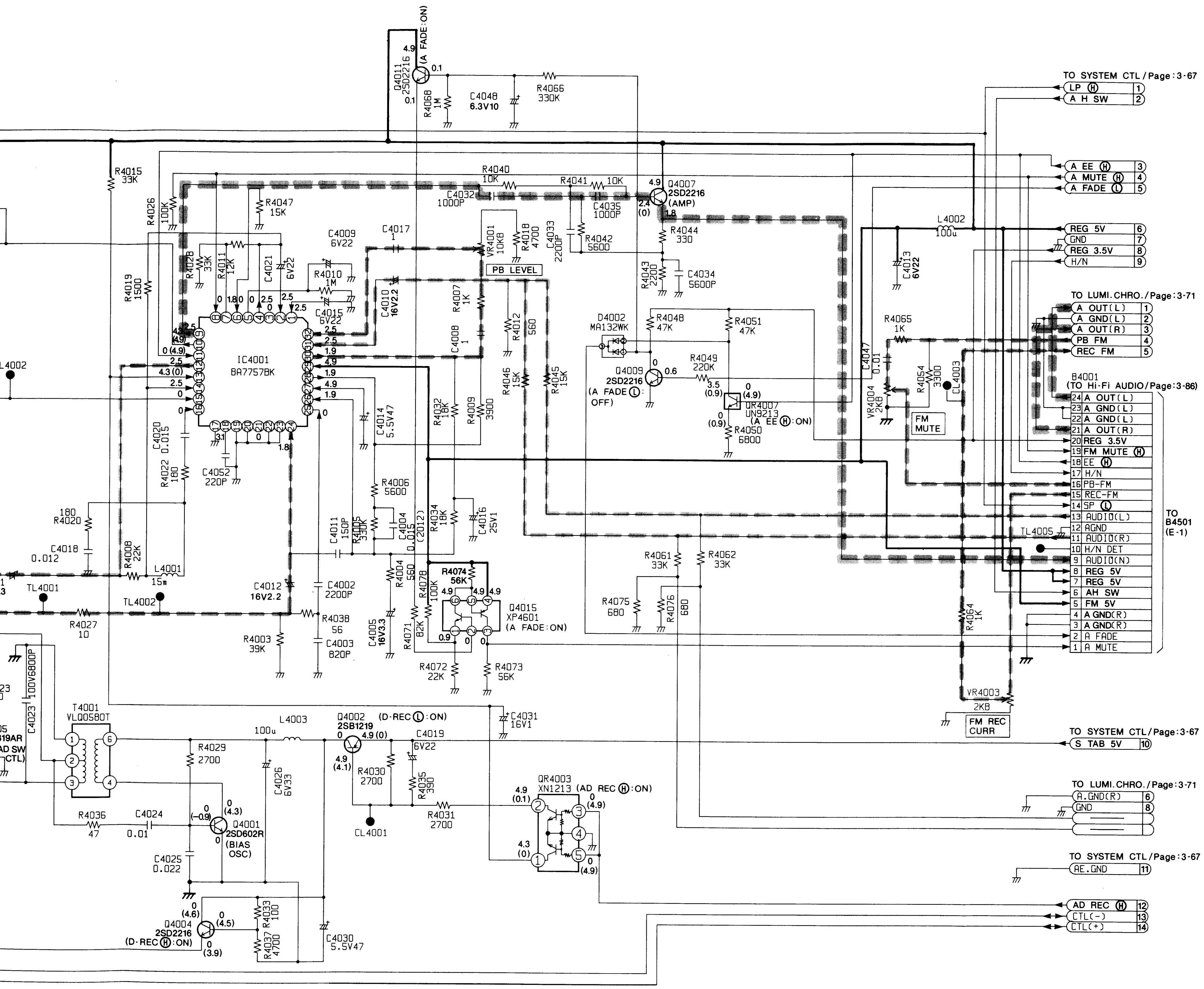


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
E
D
C
B
A
1
2
3
4
5
6
7
FP4002
AUDIO HEAD
AUDIO ERASE HEAD
CONTROL HEAD
CONTROL ERASE HEAD
GND
A.HEAD(P)
A.HEAD(R)
A.E HEAD
A.E HEAD GND
CTL(-)
CTL(+)
CE
CE.GND
Q4003 2SB1220 (HEAD SW CTL)
Q4011 2SD2216 (A FADE:ON)
Q4007 2SD2216 (AMP)
Q4009 2SD2216 (A FADE Ⓛ: OFF)
D4002 MA132WK
QR4007 UN5213 (A EE Ⓗ:ON)
IC4001 BA7757BK
VR4001 10KB
PB LEVEL
Q4015 XP4601 (A FADE:ON)
Q4006 2SD1819AR (HEAD SW CTL)
Q4005 2SD1819AR (HEAD SW CTL)
VR4002 50KB
BIAS CURR
T4001 VLQ0580T
L4003 100u
Q4002 2SB1219 (D-REC Ⓛ:ON)
Q4001 2SD602R (BIAS OSC)
Q4004 2SD2216 (D-REC Ⓗ:ON)
QR4003 XN1213 (AD REC Ⓗ:ON)
L4001 15m
L4002 100u
TL4001
TL4002
TL4005
CL4001
CL4002
VR4004 2KB
FM MUTE
VR4003 2KB
FM REC CURR
TO SYSTEM CTL
LP Ⓗ
A H SW
A EE Ⓗ
A MUTE Ⓗ
A FADE Ⓛ
REG 5V
GND
REG 3.5V
H/N
TO LUMI.CHRO
A OUT(L)
A GND(L)
A OUT(R)
PB FM
REC FM
B4001 (TO Hi-Fi AUDIO)
24 A OUT(L)
23 A GND(L)
22 A GND(L)
21 A OUT(R)
20 REG 3.5V
19 FM MUTE
18 EE Ⓗ
17 H/N
16 PB-FM
15 REC-FM
14 SP Ⓛ
13 AUDIO(L)
12 AGND
11 AUDIO(R)
10 H/N DET
9 AUDIO(N)
8 REG 5V
7 REG 5V
6 AH SW
5 FM 5V
4 A GND(R)
3 A GND(R)
2 A FADE
1 A MUTE
TO SYSTEM CTL
S TAB 5V
TO LUMI.CHRO
A.GND(R)
GND
TO SYSTEM CTL
AE.GND
AD REC Ⓗ
CTL(-)
CTL(+)
R4015 33K
R4025 22K
R4019 1500
R4024 1K
R4026 100K
R4047 15K
R4028 33K
R4011 12K
C4021 6V22
C4009 6V22
C4017 1
R4010 1M
C4015 6V22
C4010 16V2.2
R4040 10K
C4032 1000P
R4041 10K
C4035 1000P
R4018 4700
C4033 2200P
R4042 5600
R4044 330
R4043 2200
C4034 5600P
R4007 1K
R4012 560
C4008 1
R4046 15K
R4045 15K
R4048 47K
R4051 47K
R4049 220K
R4050 6800
R4065 1K
C4047 0.01
R4054 330
C4003
C4013 6V22
R4068 1M
C4048 6.3V10
R4066 330K
C4020 0.015
R4022 180
C4052 220P
C4014 5.5V47
R4032 18K
R4009 3900
R4006 5600
C4011 150P
R4005 330K
C4004 0.015 (2012)
R4034 18K
C4016 25V1
R4020 180
C4018 0.012
R4008 22K
C4001 16V3.3
R4027 10
C4012 16V2.2
C4002 2200P
R4038 56
C4003 820P
R4003 39K
R4004 560
C4005 16V3.3
R4071 82K
R4078 100K
R4074 56K
R4072 22K
R4073 56K
R4061 33K
R4062 33K
R4075 680
R4076 680
R4064 1K
R4021 4700
R4023 4700
C4023 100V6800P
R4002 15K
R4001 22K
C4022 1000P
R4029 2700
C4026 6V33
R4030 2700
C4019 6V22
R4035 390
R4031 2700
C4031 16V1
R4036 47
C4024 0.01
C4025 0.022
R4033 100
R4037 4700
C4030 5.5V47

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE. (SP MODE)

MAIN SIGNAL PATH IN REC MODE — MAIN SIGNAL PATH IN PLAYBACK MODE

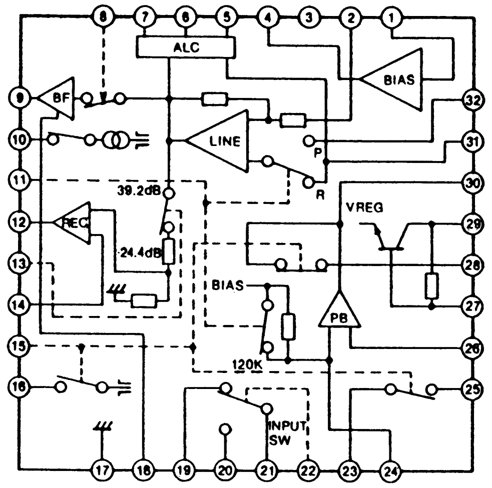

IC4001 BA7757BK
Q4011 2SD2216 (A FADE:ON)
Q4007 2SD2216 (AMP)
Q4009 2SD2216 (A FADE Ⓛ: OFF)
QR4007 UN9213 (A EE Ⓗ:ON)
Q4015 XP4601 (A FADE:ON)
D4002 MA132WK
PB LEVEL
FM MUTE
FM REC CURR
VR4001 10KB
VR4003 2KB
VR4004 2KB
L4002 100u
TL4001
TL4002
TL4005
T4001 VLQ0580T
Q4002 2SB1219 (D-REC Ⓛ:ON)
Q4001 2SD602R (BIAS OSC)
Q4004 2SD2216 (D-REC Ⓗ:ON)
QR4003 XN1213 (AD REC Ⓗ:ON)
CL4001
TO SYSTEM CTL/Page:3-67
LP Ⓗ 1
A H SW 2
A EE Ⓗ 3
A MUTE Ⓗ 4
A FADE Ⓛ 5
REG 5V 6
GND 7
REG 3.5V 8
H/N 9
TO LUMI.CHRO./Page:3-71
A OUT(L) 1
A GND(L) 2
A OUT(R) 3
PB FM 4
REC FM 5
B4001 (TO Hi-Fi AUDIO/Page:3-86)
24 A OUT(L)
23 A GND(L)
22 A GND(L)
21 A OUT(R)
20 REG 3.5V
19 FM MUTE Ⓗ
18 EE Ⓗ
17 H/N
16 PB-FM
15 REC-FM
14 SP Ⓛ
13 AUDIO(L)
12 AGND
11 AUDIO(R)
10 H/N DET
9 AUDIO(N)
8 REG 5V
7 REG 5V
6 AH SW
5 FM 5V
4 A GND(R)
3 A GND(R)
2 A FADE
1 A MUTE
TO B4501 (E-1)
TO SYSTEM CTL/Page:3-67
S TAB 5V 10
TO LUMI.CHRO./Page:3-71
A.GND(R) 6
GND 8
TO SYSTEM CTL/Page:3-67
AE.GND 11
AD REC Ⓗ 12
CTL(-) 13
CTL(+) 14
3
4
5
6
7
8

IATIC DIAGRAM FOR
O PARTS LIST.

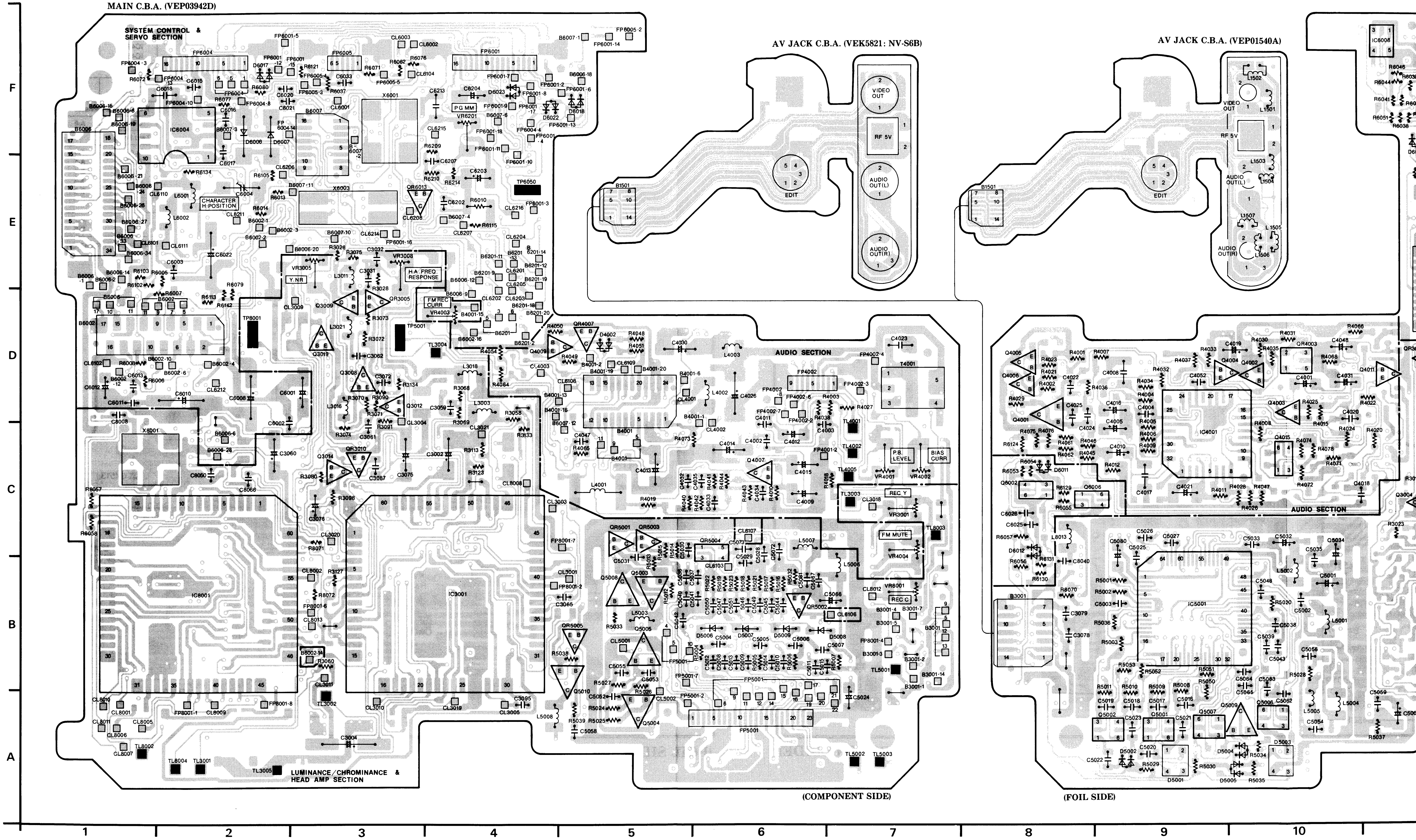
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE. (SP MODE)

IC BLOCK

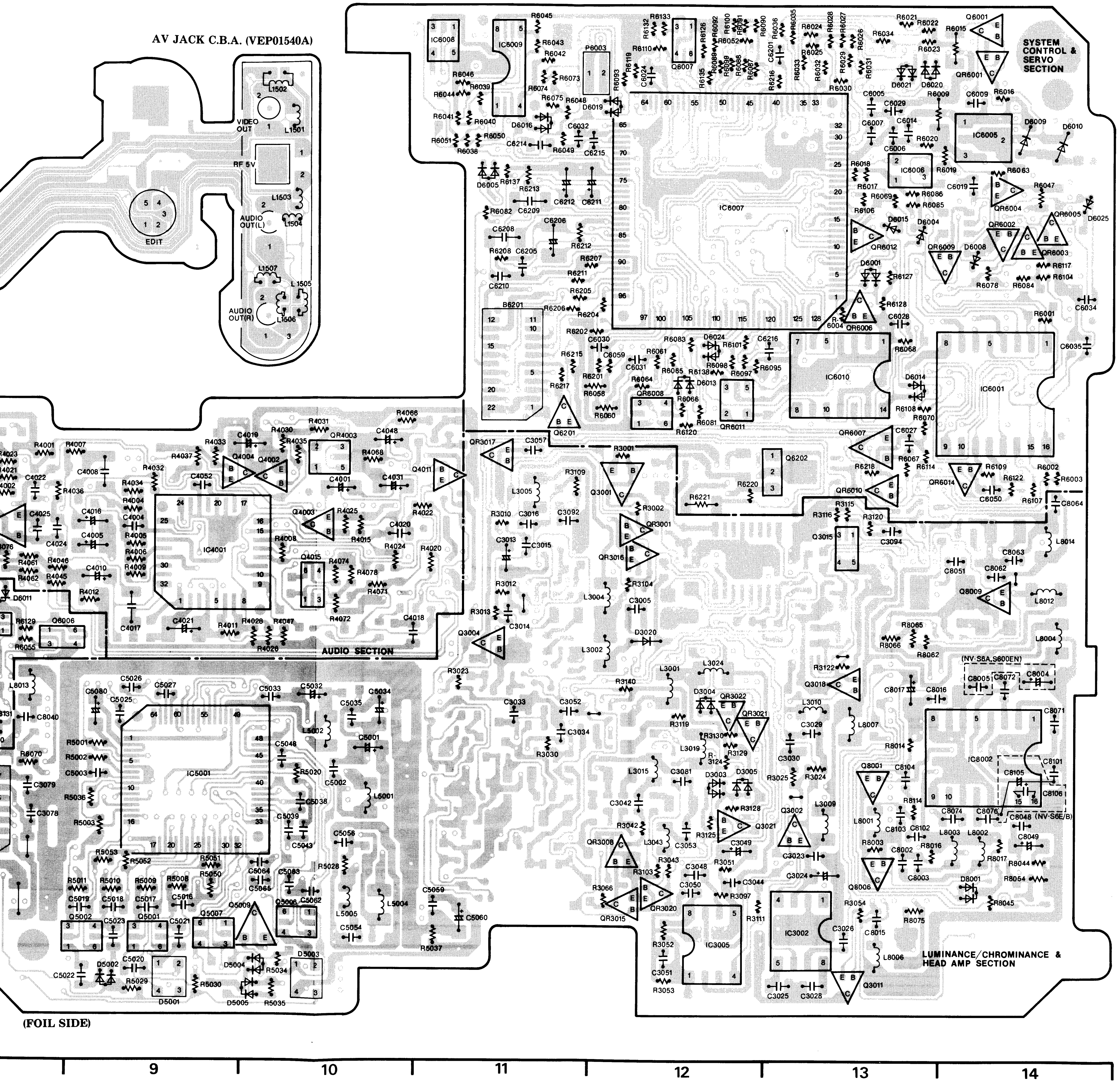
IC4001 (BA7757BK)


ALC
BF
BIAS
LINE
P
R
39.2dB
REC
24.4dB
VREG
BIAS
PB
120K
INPUT SW

3-24. MAIN [SYSTEM CONTROL & SERVO, LUMINANCE/CHROMINANCE & HEAD AMP, AUDIO Section] C.B.A. (VEP03942D)


MAIN C.B.A. (VEP03942D)
SYSTEM CONTROL & SERVO SECTION
LUMINANCE/CHROMINANCE & HEAD AMP SECTION
AUDIO SECTION
AV JACK C.B.A. (VEK5821: NV-S6B)
AV JACK C.B.A. (VEP01540A)
VIDEO OUT
RF 5V
AUDIO OUT(L)
AUDIO OUT(R)
EDIT
CHARACTER H-POSITION
Y.NR
H.A. FREQ. RESPONSE
FM REC CURR
PG MM
P.B. LEVEL
BIAS CURR
REC Y
FM MUTE
REC C
IC6004
IC8001
IC3001
IC4001
IC5001
X6001
X6003
X8001
(COMPONENT SIDE)
(FOIL SIDE)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

03942D)



Integrated Circuit	
IC3001	B-4
IC3002	A-13
IC3005	A-12
IC4001	C-9
IC5001	B-9
IC6001	D-14
IC6004	F-2
IC6005	F-14
IC6006	E-13
IC6007	E-12
IC6008	F-11
IC6009	F-11
IC6010	D-13
IC8001	B-2
IC8002	B-14

Transistor	
Q3001	D-12
Q3002	B-13
Q3004	C-11
Q3008	D-3
Q3009	D-3
Q3011	A-13
Q3012	D-3
Q3014	C-3
Q3015	C-13
Q3018	C-13
Q3019	D-3
Q3021	B-12
Q4001	D-8
Q4002	D-10
Q4003	D-10
Q4004	D-10
Q4005	D-8
Q4006	D-8
Q4007	C-6
Q4009	D-4
Q4011	D-11
Q4015	C-10
Q5001	A-9
Q5002	A-9
Q5003	B-5
Q5004	A-5
Q5005	B-5
Q5006	A-10
Q5007	A-9
Q5008	B-5
Q5009	A-10
Q5010	B-5
Q6001	F-14
Q6002	C-8
Q6006	C-9
Q6007	F-12
Q6008	D-13
Q6201	D-11
Q6202	D-13
Q8001	B-13
Q8006	B-13
Q8009	C-14

Transistor & Resistor	
QR3001	C-12
QR3005	D-3
QR3008	B-12
QR3010	C-3
QR3015	A-12
QR3016	C-12
QR3017	D-11
QR3020	A-12
QR3021	B-12
QR3022	B-12
QR4003	D-10
QR4007	D-5
QR5001	C-5
QR5002	B-6
QR5003	C-5
QR5004	C-6
QR5005	B-5
QR6001	F-14
QR6002	E-14
QR6003	E-14
QR6004	E-14
QR6005	E-14
QR6006	E-13
QR6007	D-13
QR6008	D-12
QR6009	E-14
QR6010	D-13
QR6011	D-12
QR6012	E-13
QR6013	E-3
QR6014	D-14
QR6015	D-13

Diode	
D3003	B-12
D3004	B-12
D3005	B-12
D3020	C-12
D4002	D-5
D5001	A-9
D5002	A-9
D5003	A-10
D5004	A-9
D5005	A-9
D5006	B-6
D5007	B-6
D5008	B-6
D5009	B-6
D6001	E-13
D6004	E-13
D6005	F-11
D6006	F-2
D6007	F-2
D6008	E-14
D6009	F-14
D6010	F-14
D6011	C-8
D6012	C-8
D6013	D-12
D6014	D-13
D6015	E-13
D6016	F-11
D6017	F-2
D6018	F-5
D6019	F-12
D6020	F-14
D6021	F-13
D6022	F-4
D6023	F-4
D6024	D-12
D6025	E-14
D8001	A-14

Test Point	
TP5001	D-3
TP6050	E-4
TP8001	D-2
CL3001	B-5
CL3003	C-4
CL3004	C-3
CL3005	A-4
CL3009	D-3
CL3010	A-3
CL3011	B-3
CL3018	C-7
CL3019	A-4
CL3020	C-3
CL3021	C-4
CL4001	D-6
CL4002	C-6
CL4003	D-4
CL5001	B-5
CL5002	A-5
CL6001	F-3
CL6002	F-3
CL6003	F-3
CL6101	E-1
CL6102	D-1
CL6103	B-6
CL6104	F-3
CL6106	B-7
CL6107	C-6
CL6109	D-5
CL6110	E-1
CL6111	E-2
CL6201	E-4
CL6202	D-4
CL6203	D-4
CL6204	E-4
CL6205	D-4
CL6206	E-2
CL6207	E-4
CL6208	E-3
CL6211	E-2
CL6212	D-2
CL6214	E-3
CL6215	F-4
CL6216	E-4
CL8001	A-1
CL8002	B-3
CL8005	A-1
CL8006	A-1
CL8007	A-1
CL8008	C-4
CL8009	A-2
CL8010	A-1
CL8011	A-1
CL8012	B-7
CL8013	B-3
TL3001	A-2
TL3002	A-3
TL3003	C-7
TL3004	D-4
TL3005	A-2
TL4001	C-7
TL4002	C-7
TL4005	C-7
TL5001	B-7
TL5002	A-7
TL5003	A-7
TL8002	A-1
TL8003	C-7
TL8004	A-2

Adjustment	
C6004	E-2
VR3001	C-7
VR3005	E-3
VR3008	E-3
VR4001	C-7
VR4002	C-7
VR4003	D-4
VR4004	C-7
VR6201	F-4
VR8001	B-7

Transformer	
T4001	D-7

Connector	
B1501	E-5
B1501	E-8
B3001	B-8
B4001	D-5
B6002	D-1
B6006	E-1
B6007	F-3
B6201	D-11
FP4002	D-6
FP5001	A-6
FP6001	F-4
FP6004	F-2
FP6005	F-3
P6003	F-12

Crystal Oscillator	
X6001	F-3
X6003	E-3
X8001	C-1

Coil	
L3001	B-12
L3002	C-12
L3003	D-4
L3004	C-12
L3005	D-11
L3009	B-13
L3010	B-13
L3011	E-3
L3015	B-12
L3016	D-3
L3018	D-4
L3019	B-12
L3021	D-3
L3024	C-12
L3043	B-12
L4001	C-5
L4002	D-6
L4003	D-6
L5001	B-10
L5002	B-10
L5003	B-5
L5004	A-10
L5005	A-10
L5006	B-7
L5007	C-6
L5008	A-4
L6001	E-2
L6002	E-2
L8001	B-13
L8002	B-14
L8003	B-14
L8004	C-14
L8006	A-13
L8007	B-13
L8012	C-14
L8013	C-8
L8014	C-14

Capacitor	
C3002	C-4
C3004	A-3
C3005	C-12
C3013	C-11
C3014	C-11
C3015	C-11
C3016	D-11
C3023	B-13
C3024	B-13
C3025	A-13
C3026	A-13
C3028	A-13
C3029	B-13
C3030	B-13
C3031	E-3
C3032	E-3
C3033	B-11
C3034	B-11
C3042	B-12
C3044	B-12
C3048	B-12
C3049	B-12
C3050	A-12
C3051	A-12
C3052	B-11
C3053	B-12
C3057	D-11
C3059	D-4
C3060	C-2
C3061	C-3
C3062	D-3
C3065	B-5
C3072	D-3
C3075	C-3
C3076	C-3
C3078	B-8
C3079	B-8
C3081	B-12
C3087	C-3
C3092	D-11
C3094	D-13
C3095	A-4
C4001	D-10
C4002	C-6
C4003	C-6
C4004	D-9
C4005	C-9
C4008	D-9
C4009	C-6
C4010	C
C4011	C
C4012	C
C4013	C
C4014	C
C4015	C
C4016	
C4017	C
C4018	C
C4019	
C4020	C
C4021	C
C4022	
C4023	
C4024	
C4025	C
C4026	
C4030	
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C4032	C
C4033	C
C4034	C
C4035	C
C4047	C
C4048	D
C4052	D
C5001	B
C5002	B
C5003	B
C5004	B
C5005	B
C5006	B
C5007	B
C5008	B
C5009	B
C5010	B
C5011	B
C5012	B
C5013	B
C5014	B
C5015	B
C5016	A
C5017	A
C5018	A
C5019	A
C5020	A
C5021	A
C5022	A
C5023	A
C5024	A
C5025	B
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C5029	B
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C5031	B
C5032	C
C5033	C
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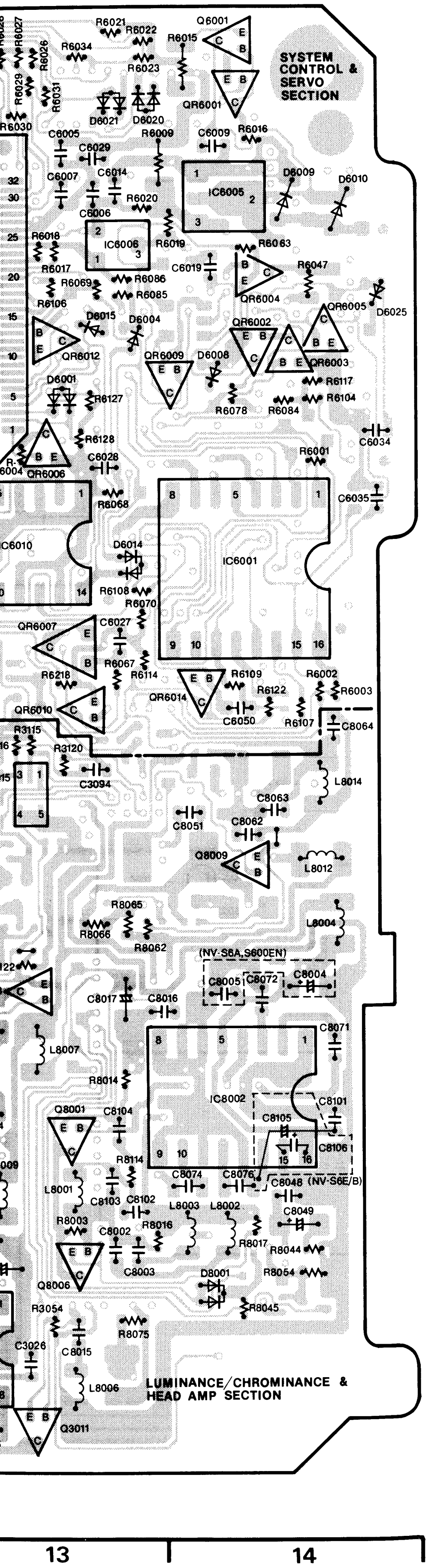
C5035	B
C5036	B
C5037	B
C5038	B
C5039	B
C5040	B
C5041	B
C5042	B
C5043	B
C5044	B
C5045	B
C5046	B
C5047	B
C5048	B
C5049	B
C5050	B
C5051	B
C5052	A
C5053	B
C5054	A
C5055	B
C5056	B
C5058	A

ADDRESS INFORMATION



MAIN C.B.A.	
Integrated Circuit	
IC3001	B-4
IC3002	A-13
IC3005	A-12
IC4001	C-9
IC5001	B-9
IC6001	D-14
IC6004	F-2
IC6005	F-14
IC6006	E-13
IC6007	E-12
IC6008	F-11
IC6009	F-11
IC6010	D-13
IC8001	B-2
IC8002	B-14
Transistor	
Q3001	D-12
Q3002	B-13
Q3004	C-11
Q3008	D-3
Q3009	D-3
Q3011	A-13
Q3012	D-3
Q3014	C-3
Q3015	C-13
Q3018	C-13
Q3019	D-3
Q3021	B-12
Q4001	D-8
Q4002	D-10
Q4003	D-10
Q4004	D-10
Q4005	D-8
Q4006	D-8
Q4007	C-6
Q4009	D-4
Q4011	D-11
Q4015	C-10
Q5001	A-9
Q5002	A-9
Q5003	B-5
Q5004	A-5
Q5005	B-5
Q5006	A-10
Q5007	A-9
Q5008	B-5
Q5009	A-10
Q5010	B-5
Q6001	F-14
Q6002	C-8
Q6006	C-9
Q6007	F-12
Q6008	D-13
Q6201	D-11
Q6202	D-13
Q8001	B-13
Q8006	B-13
Q8009	C-14
Transistor & Resistor	
QR3001	C-12
QR3005	D-3
QR3008	B-12
QR3010	C-3
QR3015	A-12
QR3016	C-12
QR3017	D-11
QR3020	A-12
QR3021	B-12
QR3022	B-12
QR4003	D-10
QR4007	D-5
QR5001	C-5
QR5002	B-6
QR5003	C-5
QR5004	C-6
QR5005	B-5
QR6001	F-14
QR6002	E-14
QR6003	E-14
QR6004	E-14
QR6005	E-14
QR6006	E-13
QR6007	D-13
QR6008	D-12
QR6009	E-14
QR6010	D-13
QR6011	D-12
QR6012	E-13
QR6013	E-3
QR6014	D-14
QR6015	D-13
Diode	
D3003	B-12
D3004	B-12
D3005	B-12
D3020	C-12
D4002	D-5
D5001	A-9
D5002	A-9
D5003	A-10
D5004	A-9
D5005	A-9
D5006	B-6
D5007	B-6
D5008	B-6
D5009	B-6
D6001	E-13
D6004	E-13
D6005	F-11
D6006	F-2
D6007	F-2
D6008	E-14
D6009	F-14
D6010	F-14
D6011	C-8
D6012	C-8
D6013	D-12
D6014	D-13
D6015	E-13
D6016	F-11
D6017	F-2
D6018	F-5
D6019	F-12
D6020	F-14
D6021	F-13
D6022	F-4
D6023	F-4
D6024	D-12
D6025	E-14
D8001	A-14
Test Point	
TP5001	D-3
TP6050	E-4
TP8001	D-2
CL3001	B-5
CL3003	C-4
CL3004	C-3
CL3005	A-4
CL3009	D-3
CL3010	A-3
CL3011	B-3
CL3018	C-7
CL3019	A-4
CL3020	C-3
CL3021	C-4
CL4001	D-6
CL4002	C-6
CL4003	D-4
CL5001	B-5
CL5002	A-5
CL6001	F-3
CL6002	F-3
CL6003	F-3
CL6101	E-1
CL6102	D-1
CL6103	B-6
CL6104	F-3
CL6106	B-7
CL6107	C-6
CL6109	D-5
CL6110	E-1
CL6111	E-2
CL6201	E-4
CL6202	D-4
CL6203	D-4
CL6204	E-4
CL6205	D-4
CL6206	E-2
CL6207	E-4
CL6208	E-3
CL6211	E-2
CL6212	D-2
CL6214	E-3
CL6215	F-4
CL6216	E-4
CL8001	A-1
CL8002	B-3
CL8005	A-1
CL8006	A-1
CL8007	A-1
CL8008	C-4
CL8009	A-2
CL8010	A-1
CL8011	A-1
CL8012	B-7
CL8013	B-3
TL3001	A-2
TL3002	A-3
TL3003	C-7
TL3004	D-4
TL3005	A-2
TL4001	C-7
TL4002	C-7
TL4005	C-7
TL5001	B-7
TL5002	A-7
TL5003	A-7
TL8002	A-1
TL8003	C-7
TL8004	A-2
Adjustment	
C6004	E-2
VR3001	C-7
VR3005	E-3
VR3008	E-3
VR4001	C-7
VR4002	C-7
VR4003	D-4
VR4004	C-7
VR6201	F-4
VR8001	B-7
Transformer	
T4001	D-7
Connector	
B1501	E-5
B1501	E-8
B3001	B-8
B4001	D-5
B6002	D-1
B6006	E-1
B6007	F-3
B6201	D-11
FP4002	D-6
FP5001	A-6
FP6001	F-4
FP6004	F-2
FP6005	F-3
P6003	F-12
Crystal Oscillator	
X6001	F-3
X6003	E-3
X8001	C-1
Coil	
L3001	B-12
L3002	C-12
L3003	D-4
L3004	C-12
L3005	D-11
L3009	B-13
L3010	B-13
L3011	E-3
L3015	B-12
L3016	D-3
L3018	D-4
L3019	B-12
L3021	D-3
L3024	C-12
L3043	B-12
L4001	C-5
L4002	D-6
L4003	D-6
L5001	B-10
L5002	B-10
L5003	B-5
L5004	A-10
L5005	A-10
L5006	B-7
L5007	C-6
L5008	A-4
L6001	E-2
L6002	E-2
L8001	B-13
L8002	B-14
L8003	B-14
L8004	C-14
L8006	A-13
L8007	B-13
L8012	C-14
L8013	C-8
L8014	C-14
Capacitor	
C3002	C-4
C3004	A-3
C3005	C-12
C3013	C-11
C3014	C-11
C3015	C-11
C3016	D-11
C3023	B-13
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C3028	A-13
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C3031	E-3
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C3042	B-12
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C3075	C-3
C3076	C-3
C3078	B-8
C3079	B-8
C3081	B-12
C3087	C-3
C3092	D-11
C3094	D-13
C3095	A-4
C4001	D-10
C4002	C-6
C4003	C-6
C4004	D-9
C4005	C-9
C4008	D-9
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C4012	C-6
C4013	C-5
C4014	C-6
C4015	C-6
C4016	D-9
C4017	C-9
C4018	C-11
C4019	D-10
C4020	C-10
C4021	C-9
C4022	D-8
C4023	D-7
C4024	D-9
C4025	C-8
C4026	D-6
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C4033	C-6
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C4035	C-6
C4047	C-5
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C4052	D-9
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C5018	A-9
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C5024	A-7
C5025	B-9
C5026	C-9
C5027	C-9
C5028	B-6
C5029	B-6
C5030	C-5
C5031	B-5
C5032	C-10
C5033	C-10
C5034	B-10
C5035	B-10
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C5064	B-10
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C5073	C-6
C5080	B-9
C5081	B-6
C6001	D-3
C6002	C-3
C6003	E-2
C6005	F-13
C6006	F-13
C6007	F-13
C6008	D-2
C6009	F-14
C6010	D-2
C6011	D-1
C6012	D-1
C6013	D-1
C6014	F-13
C6015	F-2
C6016	F-2
C6017	F-2
C6018	F-2
C6019	E-14
C6020	F-2
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C6022	E-2
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C6025	C-8
C6026	C-8
C6027	D-13
C6028	E-13
C6029	F-13
C6030	E-12
C6031	D-12
C6032	F-11
C6033	F-3
C6034	E-14
C6035	E-14
C6050	D-14
C6201	F-13
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C6203	E-4
C6204	F-4
C6205	E-11
C6206	E-11
C6207	E-4
C6208	E-11
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C6210	E-11
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C6213	F-4
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C6215	F-12
C6216	D-13
C8002	B-13
C8003	B-13
C8004	C-14
C8005	C-14
C8008	D-1
C8015	A-13
C8016	C-14
C8017	C-13
C8040	B-8
C8048	B-14
C8049	B-14
C8050	C-2
C8062	C-14
C8063	C-14
C8064	D-14
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C8071	B-14
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C8074	B-14
C8076	B-14
C8101	B-14
C8102	B-13
C8103	B-13
C8104	B-13
C8105	B-14
C8106	B-14
Resistor	
R3001	D-12
R3002	D-12
R3010	D-11
R3012	C-11
R3013	C-11
R3023	C-11
R3024	B-13
R3025	B-13
R3026	E-3
R3028	E-3
R3030	B-11
R3042	B-12
R3043	B-12
R3051	B-12
R3052	A-12
R3053	A-12
R3054	A-13
R3058	C-4
R3060	B-3
R3066	A-12
R3068	D-4
R3069	D-4
R3070	D-3
R3071	D-3
R3072	D-3
R3073	D-3
R3074	C-3
R3075	E-3
R3080	C-3
R3090	D-3
R3091	C-3
R3097	A-12
R3098	C-3
R3103	B-12
R3104	C-12
R3109	D-11
R3111	A-12
R3113	C-4
R3115	D-13
R3116	D-13
R3119	B-12
R3120	D-13
R3122	C-13
R3123	C-4
R3124	B-12
R3125	B-12
R3127	B-3
R3128	B-12
R3129	B-12
R3130	B-12
R3133	C-4
R3134	D-3
R3140	C-12
R4001	D-8
R4002	D-8
R4003	D-7
R4004	D-9
R4005	C-9
R4006	C-9
R4007	D-9
R4008	C-10
R4009	C-9
R4010	C-6
R4011	C-9
R4012	C-9
R4015	D-10
R4018	C-7
R4019	C-5
R4020	C-11
R4021	D-8
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R4035	D-10
R4036	D-9
R4037	D-9
R4038	D-6
R4040	C-5
R4041	C-6
R4042	C-6
R4043	C-6
R4044	C-6
R4045	C-9
R4046	C-9
R4047	C-10
R4048	D-5
R4049	D-5
R4050	D-4
R4051	D-5
R4054	D-4
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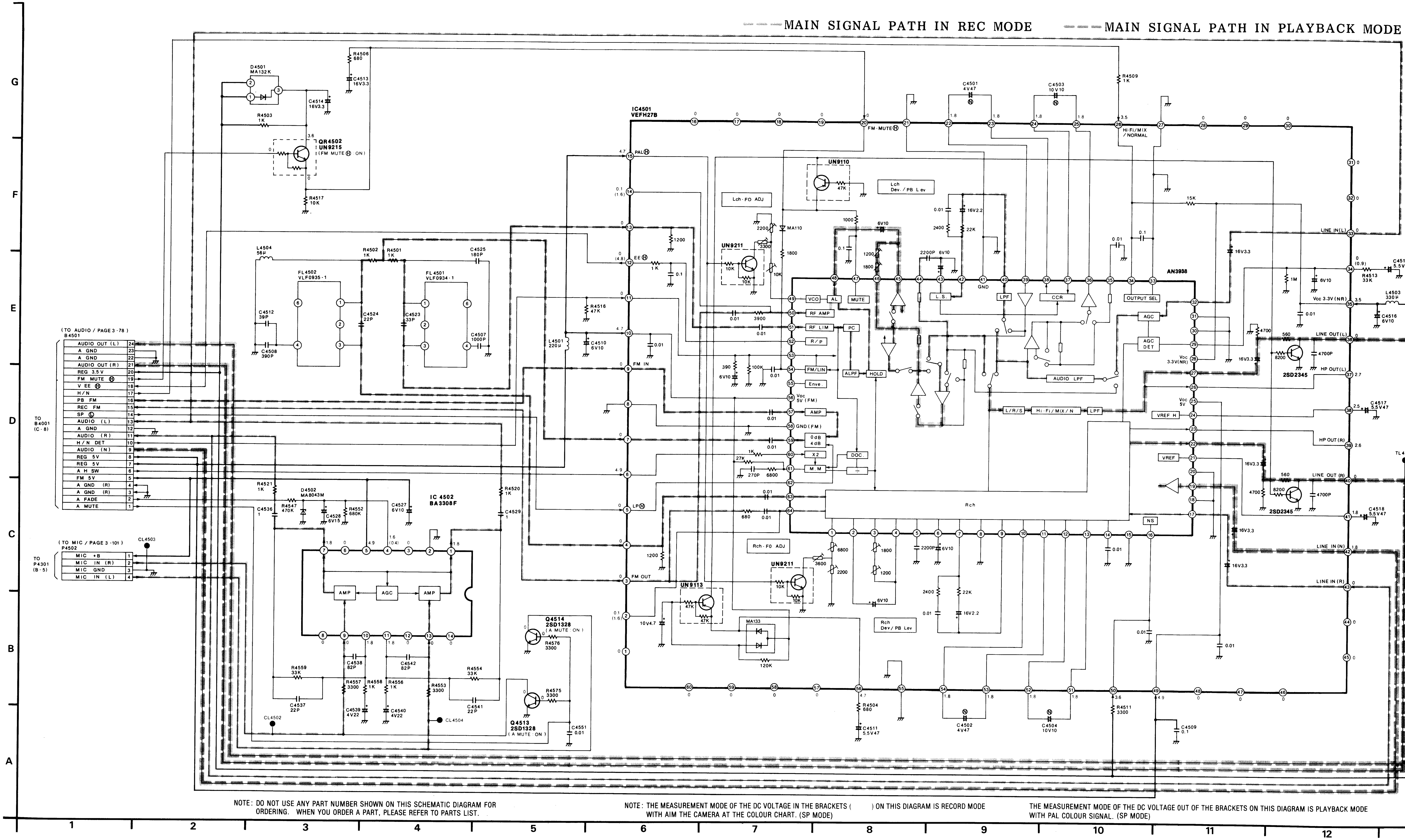
R4062	C-8
R4064	D-4
R4065	C-5
R4066	D-10
R4068	D-10
R4071	C-10
R4072	C-10
R4073	C-5
R4074	C-10
R4075	C-8
R4076	C-8
R4078	C-10
R5001	B-9
R5002	B-9
R5003	B-9
R5004	B-6
R5005	B-6
R5006	B-6
R5007	B-7
R5008	A-9
R5009	A-9
R5010	A-9
R5011	A-9
R5012	B-5
R5013	B-5
R5014	C-5
R5015	C-5
R5016	B-6
R5017	B-6
R5018	B-6
R5019	B-6
R5020	B-10
R5021	B-6
R5022	B-6
R5023	B-6
R5024	A-5
R5025	A-5
R5026	B-5
R5027	B-5
R5028	B-10
R5029	A-9
R5030	A-9
R5032	B-6
R5033	B-5
R5034	A-10
R5035	A-10
R5036	B-9
R5037	A-11
R5038	B-5
R5039	A-5
R5050	A-9
R5051	B-9
R5052	B-9
R5053	B-9
R6001	E-14
R6002	D-14
R6003	D-14
R6004	E-13
R6005	E-2
R6006	D-1
R6007	D-2
R6008	D-1
R6009	F-14
R6010	E-4
R6013	E-2
R6014	E-2
R6015	F-14
R6016	F-14
R6017	F-13
R6018	F-13
R6019	F-14
R6020	F-13
R6021	F-13
R6022	F-13
R6023	F-13
R6024	F-13
R6025	F-13
R6026	F-13
R6027	F-13
R6028	F-13
R6029	F-13
R6030	F-13
R6031	F-13
R6032	F-13
R6033	F-13
R6034	F-13
R6035	F-13
R6036	F-13
R6037	F-3
R6038	F-11
R6039	F-11
R6040	F-11
R6041	F-11
R6042	F-11
R6043	F-11
R6044	F-11
R6045	F-11
R6046	F-11
R6047	E-14
R6048	F-11
R6049	F-11
R6050	F-11
R6051	F-11
R6052	F-12
R6053	C-8
R6054	C-8
R6055	C-8
R6056	B-8
R6057	C-8
R6058	D-12
R6059	D-12
R6060	D-12
R6061	D-12
R6062	F-3
R6063	F-14
R6064	D-12
R6065	D-12
R6066	D-12
R6067	D-13
R6068	E-13
R6069	E-13
R6070	D-13
R6071	F-3
R6072	F-1
R6073	F-11
R6074	F-11
R6075	F-11
R6076	F-3
R6077	F-2
R6078	E-14
R6079	D-2
R6080	F-2
R6081	D-12
R6082	E-11
R6083	D-12
R6084	E-14
R6085	E-13
R6086	E-13
R6087	F-12
R6088	F-12
R6089	F-12
R6090	F-12
R6091	F-12
R6092	F-12
R6093	F-12
R6095	D-12
R6097	D-12
R6098	D-12
R6099	F-12
R6100	F-12
R6101	E-12
R6102	E-1
R6103	E-1
R6104	E-14
R6105	E-2
R6106	E-13
R6107	D-14
R6108	D-13
R6109	D-14
R6110	F-12
R6113	D-2
R6114	D-13
R6115	E-4
R6117	E-14
R6119	F-12
R6120	D-12
R6121	F-3
R6122	D-14
R6124	C-8
R6126	F-12
R6127	E-13
R6128	E-13
R6129	C-8
R6130	B-8
R6131	B-8
R6132	F-12
R6133	F-12
R6134	E-2
R6135	F-12
R6137	F-11
R6138	D-12
R6139	D-13
R6140	D-13
R6141	D-13
R6142	D-2
R6201	D-12
R6202	E-12
R6204	E-12
R6205	E-11
R6206	E-11
R6207	E-12
R6208	E-11
R6209	F-4
R6210	E-4
R6211	E-11
R6212	E-11
R6213	E-11
R6214	E-4
R6215	D-11
R6216	F-13
R6217	D-11
R6218	D-13
R6219	F-4
R6220	D-12
R6221	D-12
R8003	B-13
R8014	B-13
R8016	B-13
R8017	B-14
R8044	B-14
R8045	A-14
R8054	B-14
R8057	C-1
R8058	C-1
R8062	C-13
R8065	C-13
R8066	C-13
R8070	B-8
R8071	C-3
R8072	B-3
R8075	A-13
R8114	B-13

ADDRESS INFORMATION

3-25. Hi-Fi AUDIO SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
(TO AUDIO / PAGE 3-78)
B4501
AUDIO OUT (L) 24
A GND 23
A GND 22
AUDIO OUT (R) 21
REG 3.5V 20
FM MUTE Ⓗ 19
V EE Ⓗ 18
H/N 17
PB FM 16
REC FM 15
SP Ⓛ 14
AUDIO (L) 13
A GND 12
AUDIO (R) 11
H/N DET 10
AUDIO (N) 9
REG 5V 8
REG 5V 7
A H SW 6
FM 5V 5
A GND (R) 4
A GND (R) 3
A FADE 2
A MUTE 1
TO B4001 (C-8)
(TO MIC / PAGE 3-101)
P4502
MIC +B 1
MIC IN (R) 2
MIC GND 3
MIC IN (L) 4
TO P4301 (B-5)
CL4503
CL4502
CL4504
D4501 MA132K
R4506 680
C4513 16V3.3
C4514 16V3.3
R4503 1K
QR4502 UN9215 (FM MUTE Ⓗ ON)
R4517 10K
L4504 56µ
FL4502 VLF0935-1
FL4501 VLF0934-1
R4502 1K
R4501 1K
C4525 180P
C4512 39P
C4508 390P
C4524 22P
C4523 33P
C4507 1000P
L4501 220µ
R4516 47K
C4510 6V10
IC 4502 BA3308F
AMP
AGC
AMP
D4502 MA8043M
R4521 1K
R4547 470K
C4536 1
C4528 6V15
R4552 680K
C4527 6V10
R4520 1K
C4529 1
C4538 82P
C4542 82P
R4559 33K
R4557 3300
R4558 1K
R4556 1K
R4553 3300
R4554 33K
C4537 22P
C4539 4V22
C4540 4V22
C4541 22P
Q4514 2SD1328 (A MUTE ON)
R4576 3300
Q4513 2SD1328 (A MUTE ON)
R4575 3300
C4551 0.01
IC4501 VEFH27B
PAL Ⓗ
EE Ⓗ
FM IN
LP Ⓗ
FM OUT
FM-MUTE Ⓗ
UN9110
UN9211
UN9113
MA133
MA110
Lch-FO ADJ
Lch Dev./PB Lev
Rch-FO ADJ
Rch Dev./PB Lev
AN3938
VCO
AL
MUTE
RF AMP
RF LIM
PC
R/P
FM/LIN
ALPF
HOLD
Enve
Vcc 5V (FM)
AMP
GND (FM)
0dB 4dB
X2
DOC
M.M
L.S.
LPF
CCR
OUTPUT SEL
AGC
AGC DET
AUDIO LPF
L/R/S
Hi-Fi/MIX/N
LPF
VREF H
VREF
Rch
NS
GND
Hi-Fi/MIX /NORMAL
Vcc 3.3V(NR)
Vcc 5V
C4501 4V47
C4503 10V10
R4509 1K
C4502 4V47
C4504 10V10
R4504 680
C4511 5.5V47
R4511 3300
C4509 0.1
R4513 33K
L4503 330µ
C4516 6V10
C4517 5.5V47
C4518 5.5V47
2SD2345
2SD2345
LINE IN (L)
LINE OUT (L)
HP OUT (L)
HP OUT (R)
LINE OUT (R)
LINE IN (N)
LINE IN (R)
TL4

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

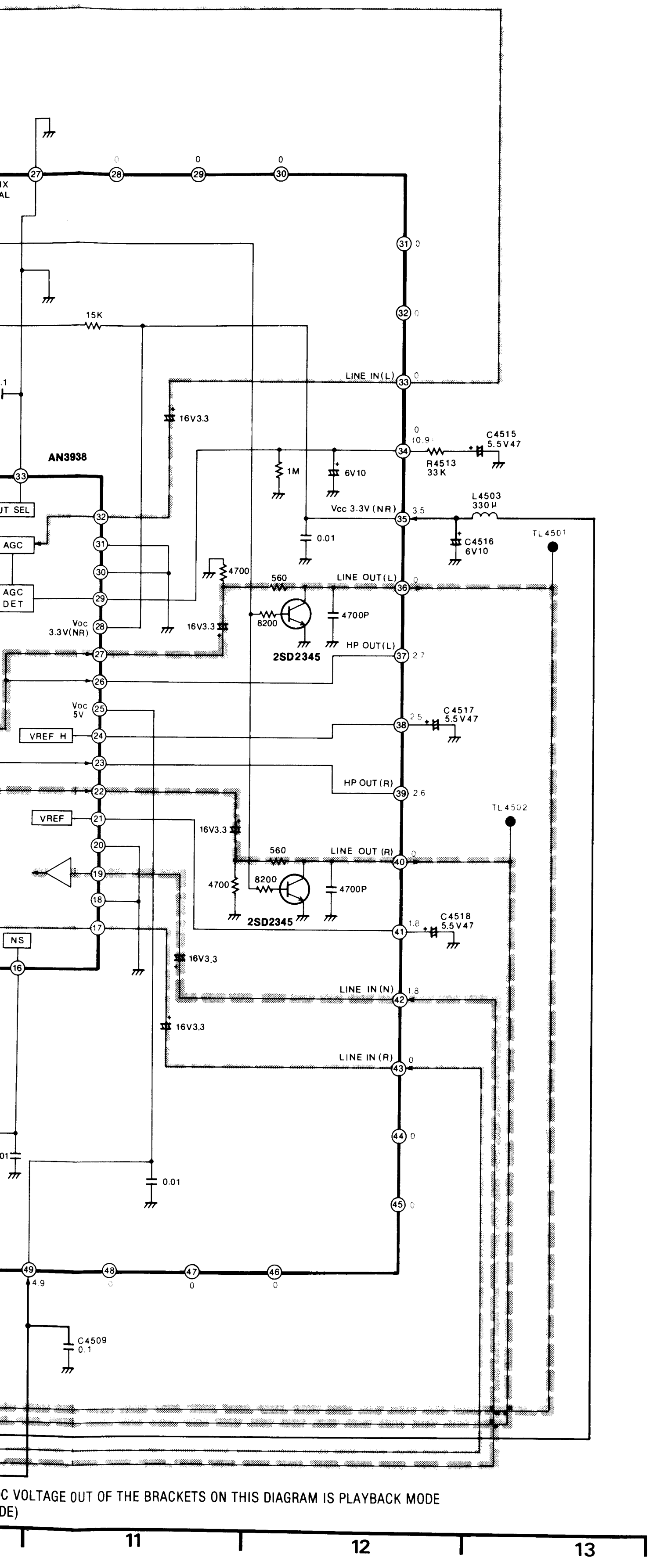
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

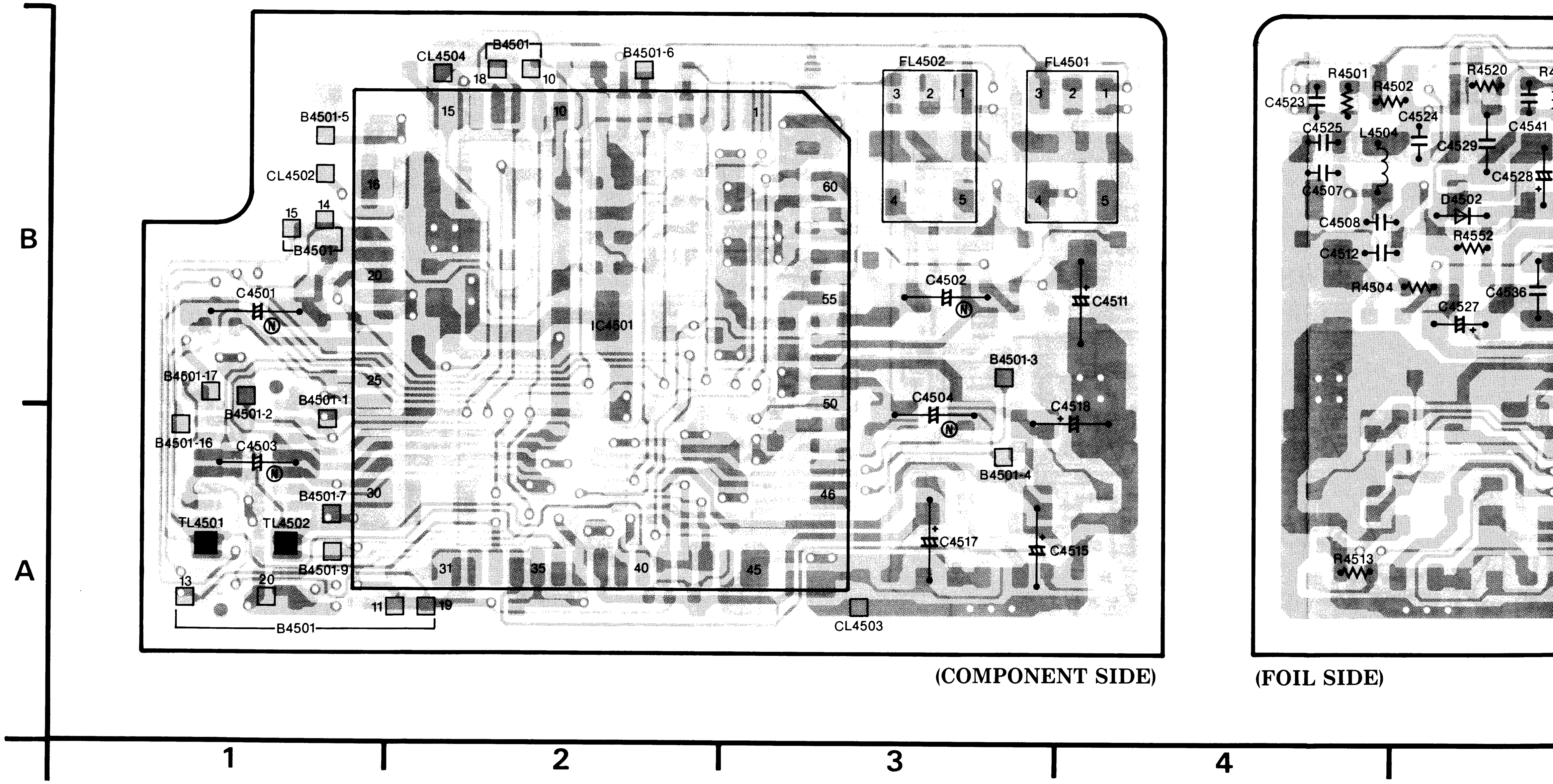
Back Page:
MAIN C.B.A. Section

3-26. Hi-Fi AUDIO C.B.A. (VEP04381A)

SIGNAL PATH IN PLAYBACK MODE


AN3938
LINE IN(L)
R4513
33K
C4515
5.5V47
L4503
330µ
C4516
6V10
Vcc 3.3V(NR)
TL4501
TL4502
LINE OUT(L)
HP OUT(L)
HP OUT(R)
LINE OUT(R)
C4517
5.5V47
C4518
5.5V47
LINE IN(N)
LINE IN(R)
2SD2345
15K
1M
6V10
16V3.3
4700
560
8200
4700P
0.01
AGC
AGC DET
VREF H
VREF
NS
Vcc 5V
Vcc 3.3V(NR)
C4509
0.1
11
12
13

C VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE
DE)


B
A
1
2
3
4
CL4504
B4501
B4501-6
FL4502
FL4501
B4501-5
CL4502
IC4501
C4501
C4502
C4503
C4504
C4511
C4515
C4517
C4518
B4501-1
B4501-2
B4501-3
B4501-4
B4501-7
B4501-9
B4501-16
B4501-17
TL4501
TL4502
CL4503
C4523
R4501
R4502
C4524
C4525
L4504
C4529
R4520
C4541
C4528
C4507
D4502
C4508
R4552
C4512
R4504
C4527
C4536
R4513

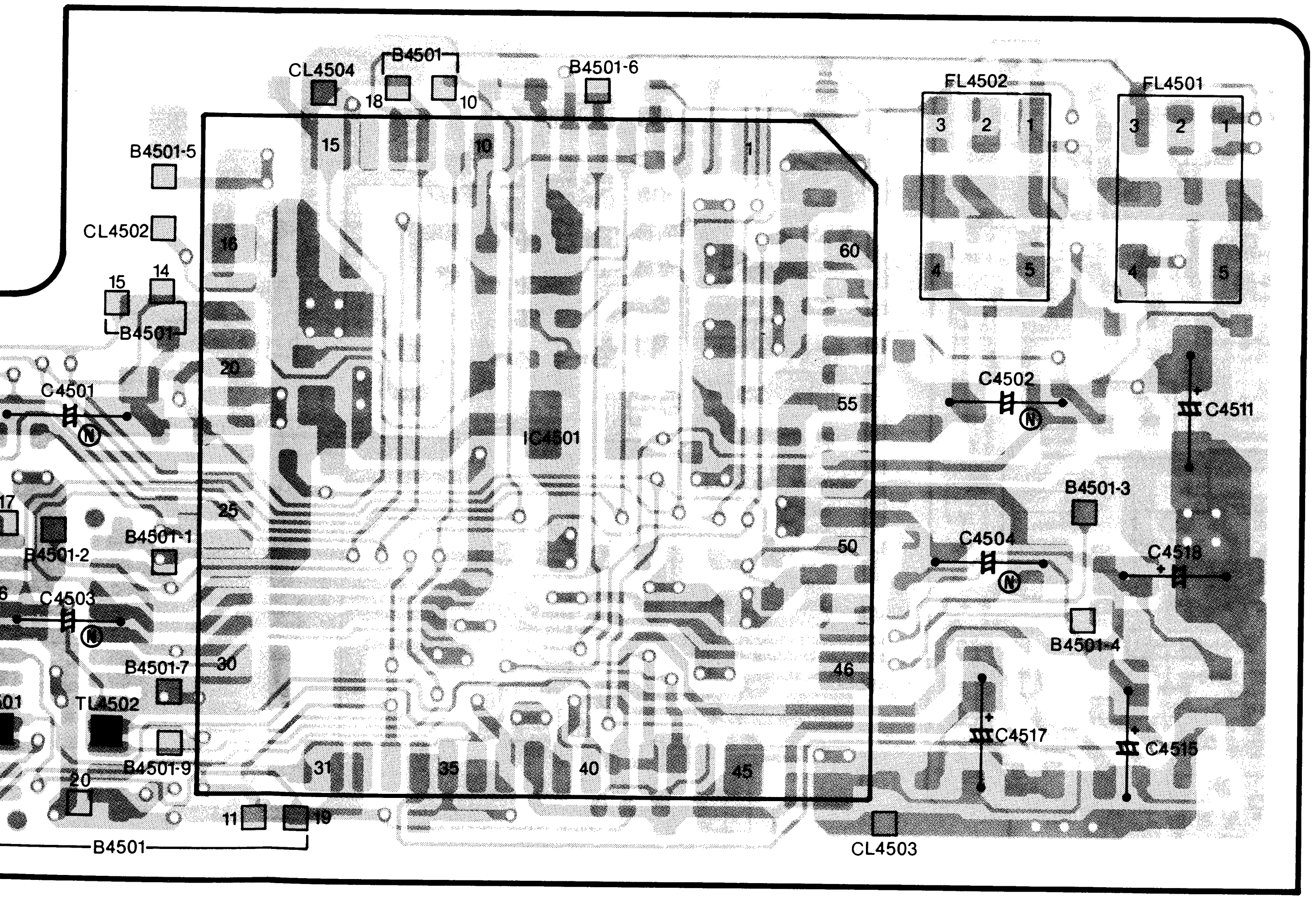
(COMPONENT SIDE)

(FOIL SIDE)

DIO C.B.A. (VEP04381A)

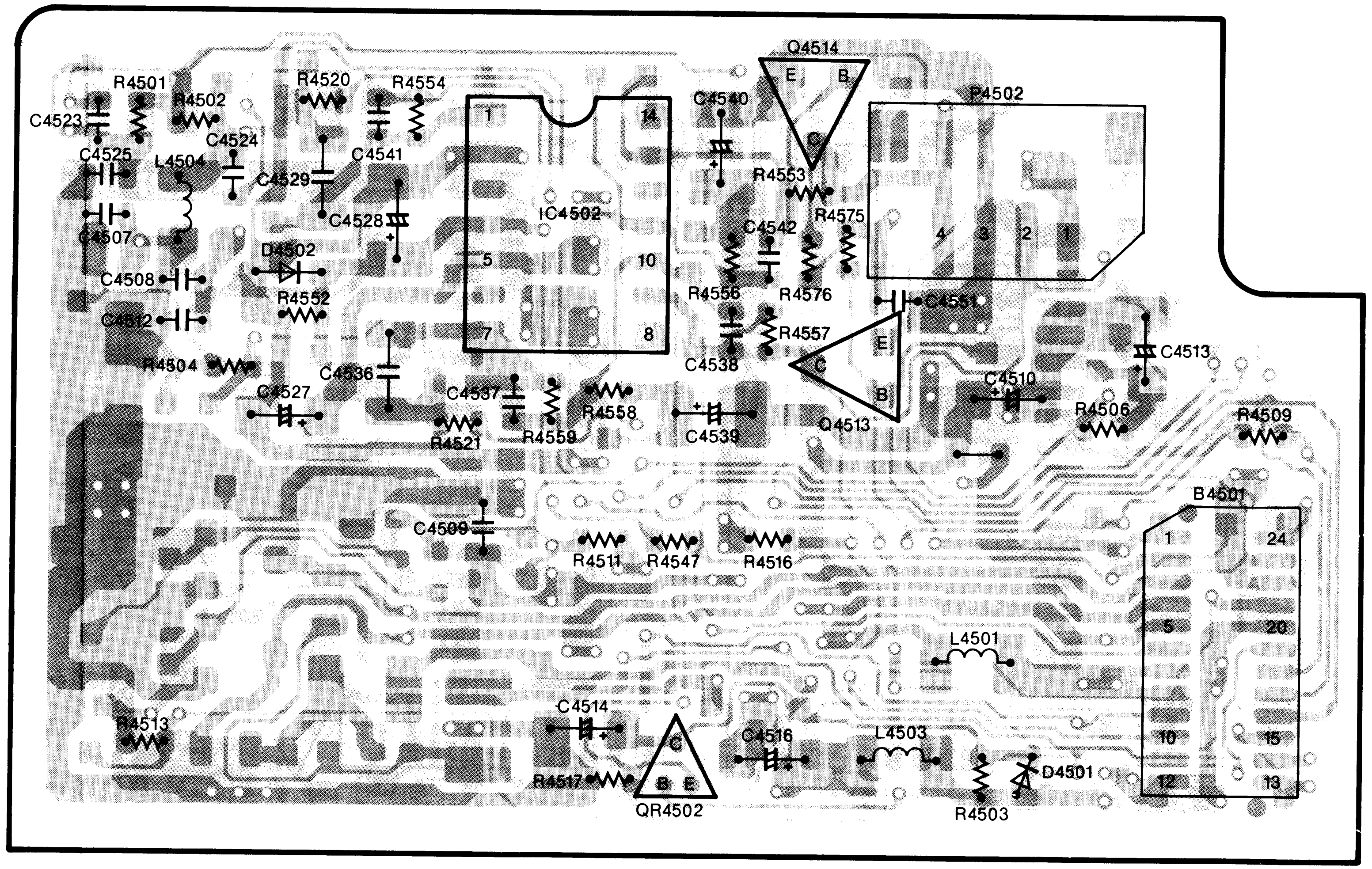
Hi-Fi AUDIO C.B.A.	
Integrated Circuit	
IC4501	B-2
IC4502	B-5
Transistor	
Q4513	B-6
Q4514	B-6
Transistor & Resistor	
QR4502	A-6
Test Point	
TL4501	A-1
TL4502	A-1
CL4502	B-1
CL4503	A-3
CL4504	B-2
Connector	
B4501	A-7
P4502	B-6

ADDRESS INFORMATION



CL4504
B4501
B4501-6
FL4502
FL4501
B4501-5
CL4502
B4501
C4501
IC4501
B4501-2
B4501-1
C4503
B4501-7
TL4502
B4501-9
B4501
C4502
B4501-3
C4504
C4518
C4511
B4501-4
C4517
C4515
CL4503

(COMPONENT SIDE)

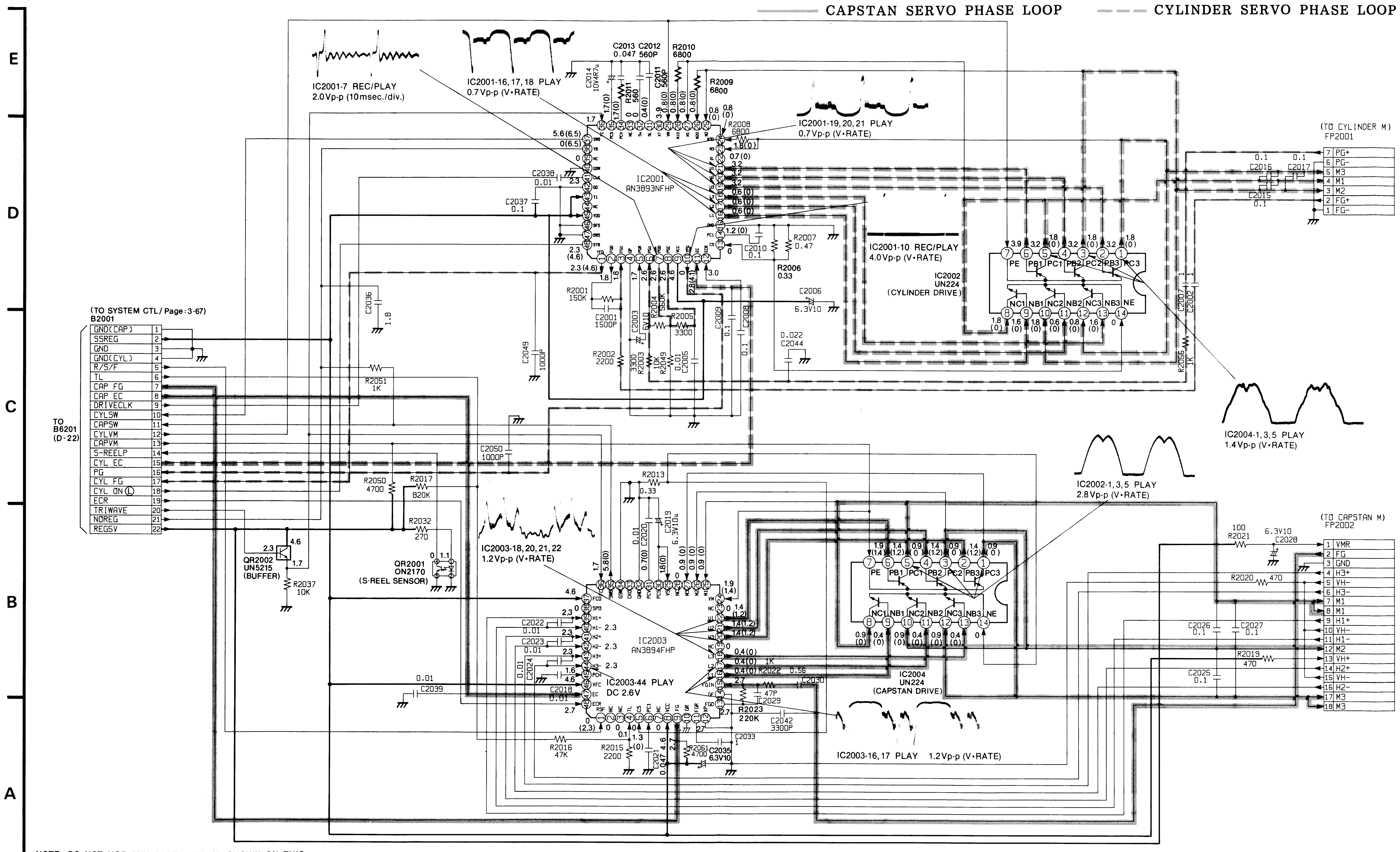


R4501
R4502
R4520
R4554
C4523
C4525
L4504
C4524
C4529
C4541
C4528
C4507
D4502
C4508
R4552
C4512
R4504
C4527
C4536
C4537
R4521
R4559
R4558
IC4502
C4540
Q4514
R4553
R4575
C4542
R4556
R4576
R4557
C4538
C4539
Q4513
P4502
C4551
C4513
C4510
R4506
R4509
B4501
C4509
R4511
R4547
R4516
L4501
R4513
C4514
R4517
QR4502
C4516
L4503
R4503
D4501
1
2
3
4
5
6
7

(FOIL SIDE)

3-27. DRIVE SCHEMATIC DIAGRAM

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP


E
D
C
B
A
IC2001-7 REC/PLAY 2.0Vp-p (10msec./div.)
IC2001-16, 17, 18 PLAY 0.7Vp-p (V•RATE)
IC2001-19, 20, 21 PLAY 0.7Vp-p (V•RATE)
IC2001 AN3893NFHP
IC2001-10 REC/PLAY 4.0Vp-p (V•RATE)
IC2002 UN224 (CYLINDER DRIVE)
(TO CYLINDER M) FP2001
7 PG+
6 PG-
5 M3
4 M1
3 M2
2 FG+
1 FG-
(TO SYSTEM CTL/Page:3-67) B2001
1 GND(CAP)
2 SSREG
3 GND
4 GND(CYL)
5 R/S/F
6 TL
7 CAP FG
8 CAP EC
9 DRIVECLK
10 CYLSW
11 CAPSW
12 CYLVM
13 CAPVM
14 S-REELP
15 CYL EC
16 PG
17 CYL FG
18 CYL ON Ⓛ
19 ECR
20 TRIWAVE
21 NOREG
22 REG5V
TO B6201 (D-22)
IC2004-1, 3, 5 PLAY 1.4Vp-p (V•RATE)
IC2002-1, 3, 5 PLAY 2.8Vp-p (V•RATE)
QR2002 UN5215 (BUFFER)
QR2001 ON2170 (S-REEL SENSOR)
IC2003-18, 20, 21, 22 1.2Vp-p (V•RATE)
IC2003 AN3894FHP
IC2003-44 PLAY DC 2.6V
IC2004 UN224 (CAPSTAN DRIVE)
IC2003-16, 17 PLAY 1.2Vp-p (V•RATE)
(TO CAPSTAN M) FP2002
1 VMR
2 FG
3 GND
4 H3+
5 VH-
6 H3-
7 M1
8 M1
9 H1+
10 VH-
11 H1-
12 M2
13 VH+
14 H2+
15 VH-
16 H2-
17 M3
18 M3

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

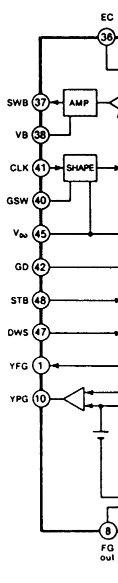
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

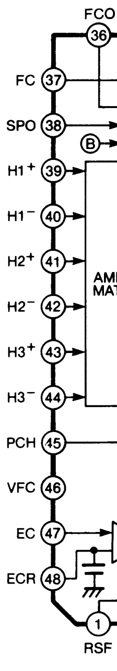
1 2 3 4 5 6 7

IC BL

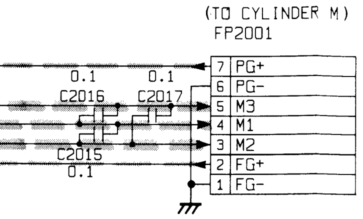
IC2001 (A

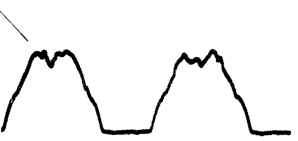


IC2003 (A

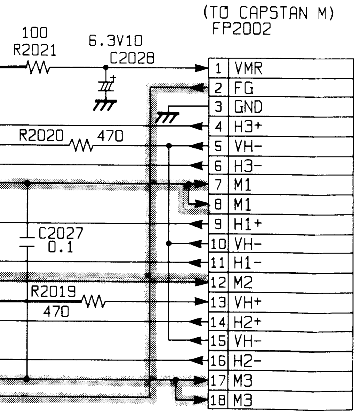

FCO
FC
SPO
H1+
H1-
H2+
H2-
H3+
H3-
PCH
VFC
EC
ECR
RSF

R SERVO SPEED LOOP
R SERVO PHASE LOOP


(TO CYLINDER M)
FP2001
0.1
C2016
0.1
C2017
C2015
0.1
7 PG+
6 PG-
5 M3
4 M1
3 M2
2 FG+
1 FG-



IC2004-1,3,5 PLAY
1.4Vp-p (V•RATE)

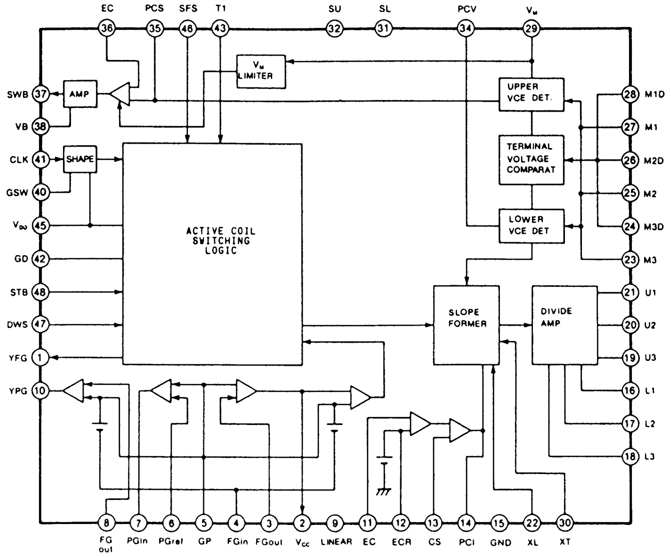

(TO CAPSTAN M)
FP2002
100
R2021
6.3V10
C2028
R2020 470
C2027
0.1
R2019
470
1 VMR
2 FG
3 GND
4 H3+
5 VH-
6 H3-
7 M1
8 M1
9 H1+
10 VH-
11 H1-
12 M2
13 VH+
14 H2+
15 VH-
16 H2-
17 M3
18 M3

HIS DIAGRAM IS PLAYBACK MODE

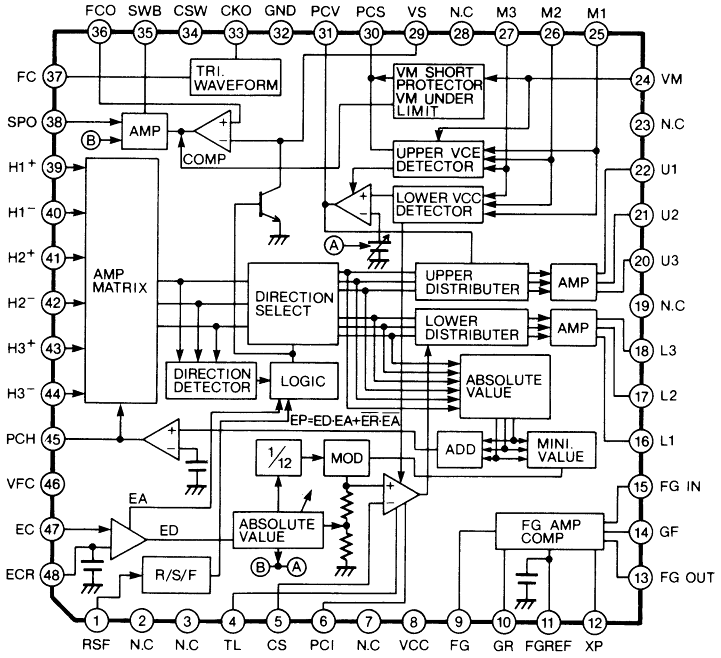
7

IC BLOCK

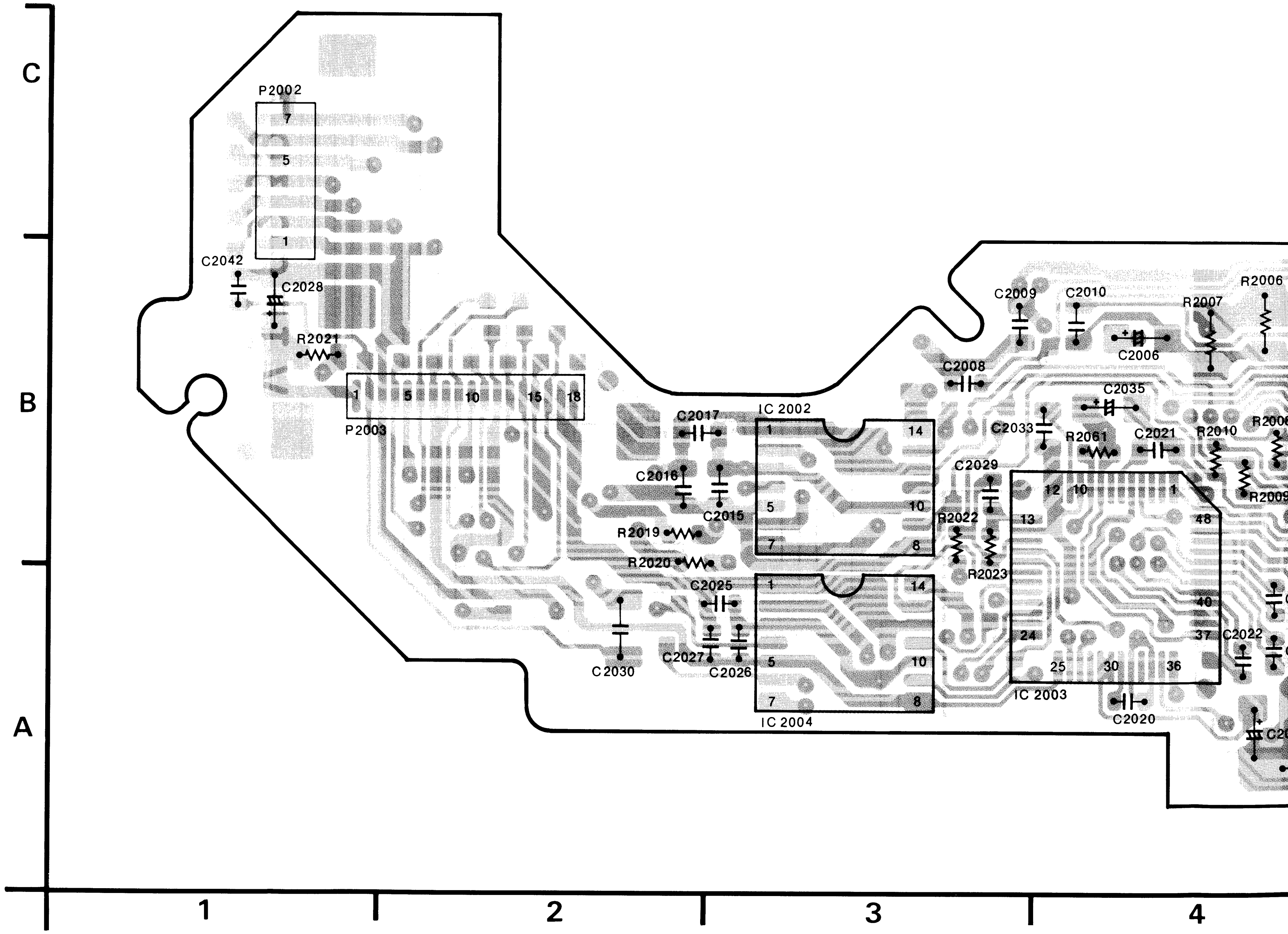
IC2001 (AN3893NFHP)


EC
PCS
SFS
T1
SU
SL
PCV
VM
36
35
46
43
32
31
34
29
VM LIMITER
AMP
UPPER VCE DET.
TERMINAL VOLTAGE COMPARAT
LOWER VCE DET
SHAPE
ACTIVE COIL SWITCHING LOGIC
SLOPE FORMER
DIVIDE AMP
SWB 37
VB 38
CLK 41
GSW 40
VDD 45
GD 42
STB 48
DWS 47
YFG 1
YPG 10
28 M1D
27 M1
26 M2D
25 M2
24 M3D
23 M3
21 U1
20 U2
19 U3
16 L1
17 L2
18 L3
8 FG out
7 PGin
6 PGref
5 GP
4 FGin
3 FGout
2 Vcc
9 LINEAR
11 EC
12 ECR
13 CS
14 PCI
15 GND
22 XL
30 XT

IC2003 (AN3894FHP)


FCO
SWB
CSW
CKO
GND
PCV
PCS
VS
N.C
M3
M2
M1
36
35
34
33
32
31
30
29
28
27
26
25
TRI. WAVEFORM
VM SHORT PROTECTOR
VM UNDER LIMIT
UPPER VCE DETECTOR
LOWER VCC DETECTOR
AMP
COMP
AMP MATRIX
DIRECTION SELECT
UPPER DISTRIBUTER
LOWER DISTRIBUTER
AMP
AMP
DIRECTION DETECTOR
LOGIC
ABSOLUTE VALUE
EP=ED·EA+ER·EA
ADD
MINI. VALUE
1/12
MOD
ABSOLUTE VALUE
EA
ED
R/S/F
FG AMP COMP
A
B
FC 37
SPO 38
H1+ 39
H1- 40
H2+ 41
H2- 42
H3+ 43
H3- 44
PCH 45
VFC 46
EC 47
ECR 48
24 VM
23 N.C
22 U1
21 U2
20 U3
19 N.C
18 L3
17 L2
16 L1
15 FG IN
14 GF
13 FG OUT
1 RSF
2 N.C
3 N.C
4 TL
5 CS
6 PCI
7 N.C
8 VCC
9 FG
10 GR
11 FGREF
12 XP

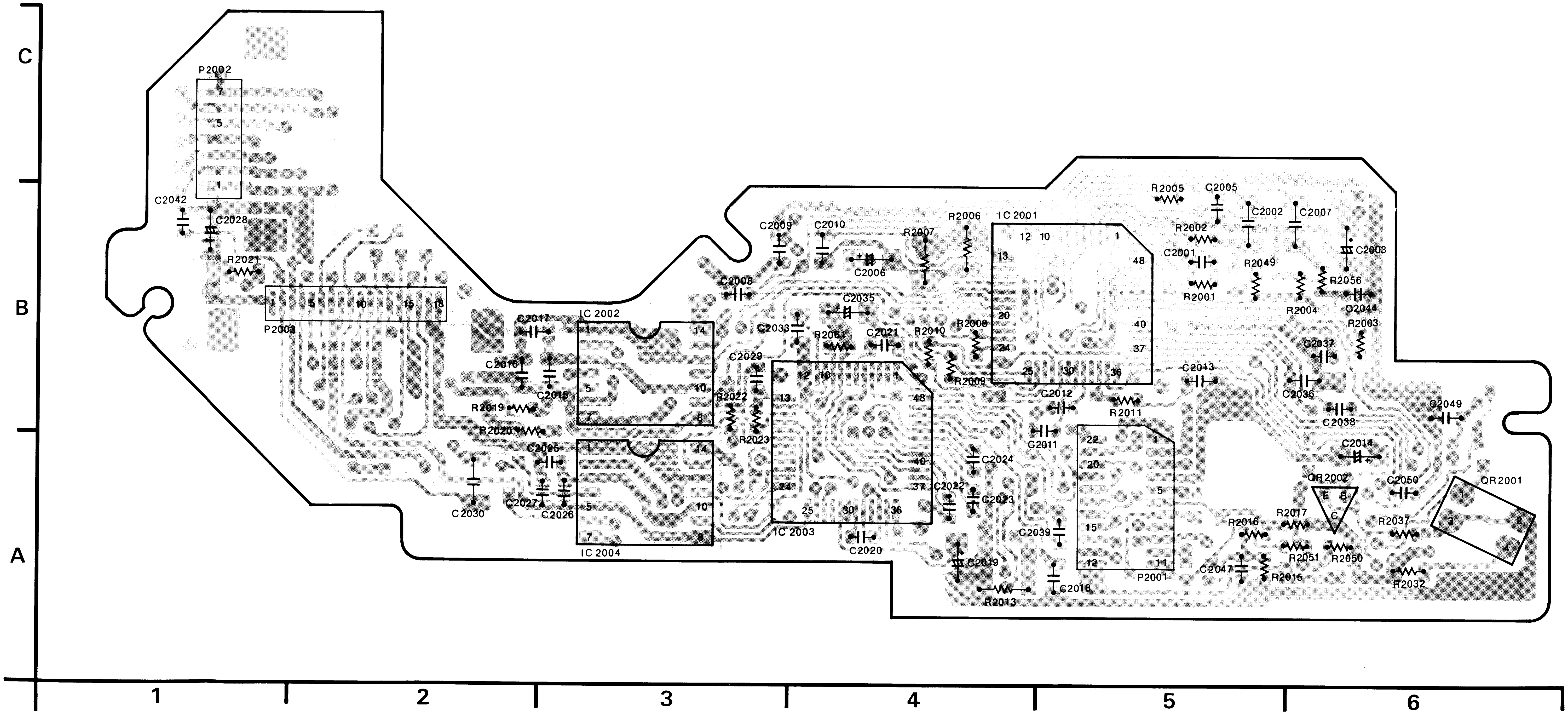
3-28. DRIVE C.B.A. (VEP02397A)


C
B
A
1
2
3
4
P2002
7
5
1
C2042
C2028
R2021
P2003
1
5
10
15
18
C2017
C2016
C2015
R2019
R2020
C2025
C2027
C2026
C2030
IC 2002
14
5
10
7
8
IC 2004
C2008
C2009
C2010
C2006
C2035
C2033
R2061
C2021
R2010
R2006
R2007
R2009
C2029
R2022
R2023
IC 2003
12
10
1
13
48
40
24
25
30
36
37
C2022
C2020

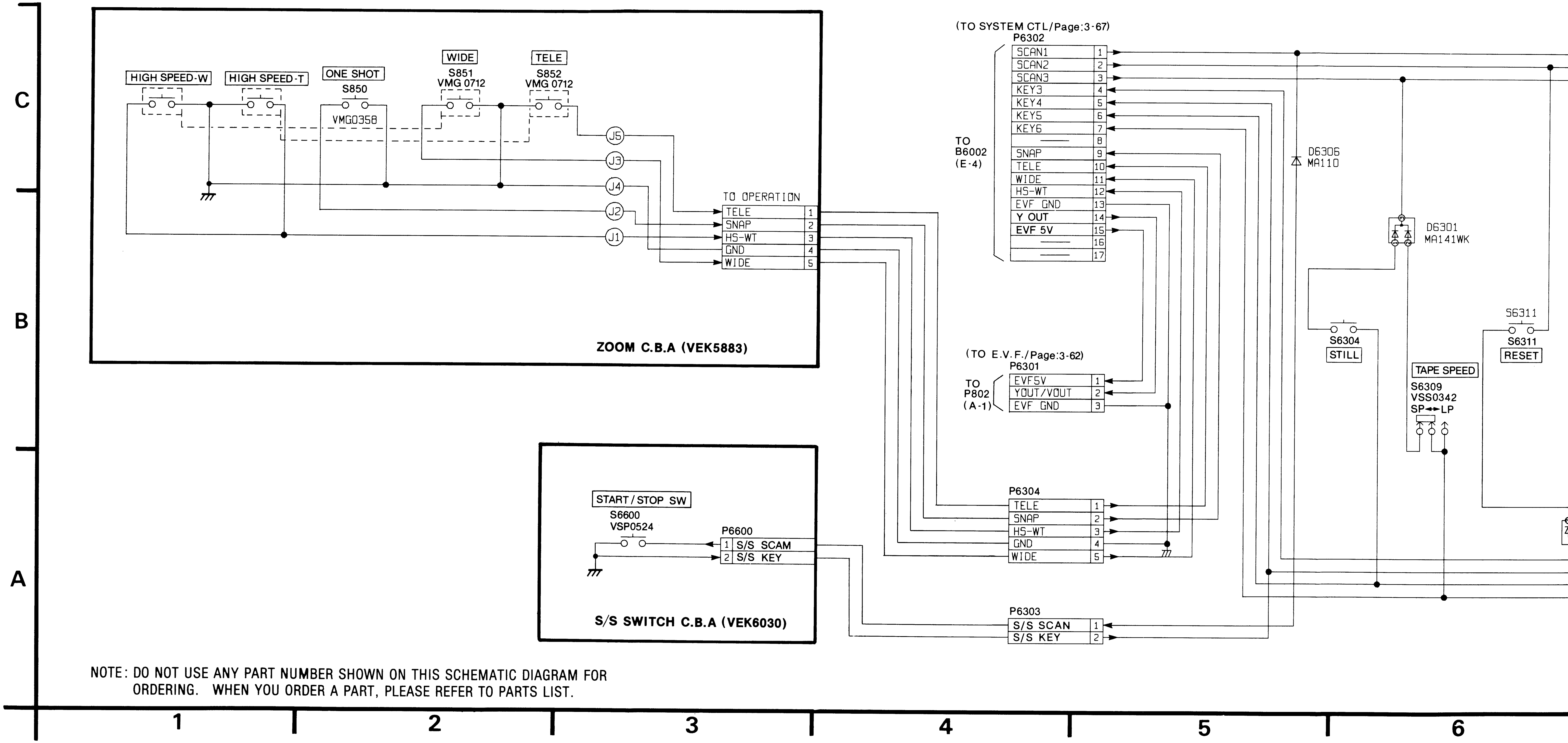
3-28. DRIVE C.B.A. (VEP02397A)

DRIVE C.B.A.	
Integrated Circuit	
IC2001	B-5
IC2002	B-3
IC2003	B-4
IC2004	A-3
Transistor & Resistor	
QR2001	A-6
QR2002	A-6
Connector	
P2001	A-5
P2002	C-1
P2003	B-2

ADDRESS INFORMATION

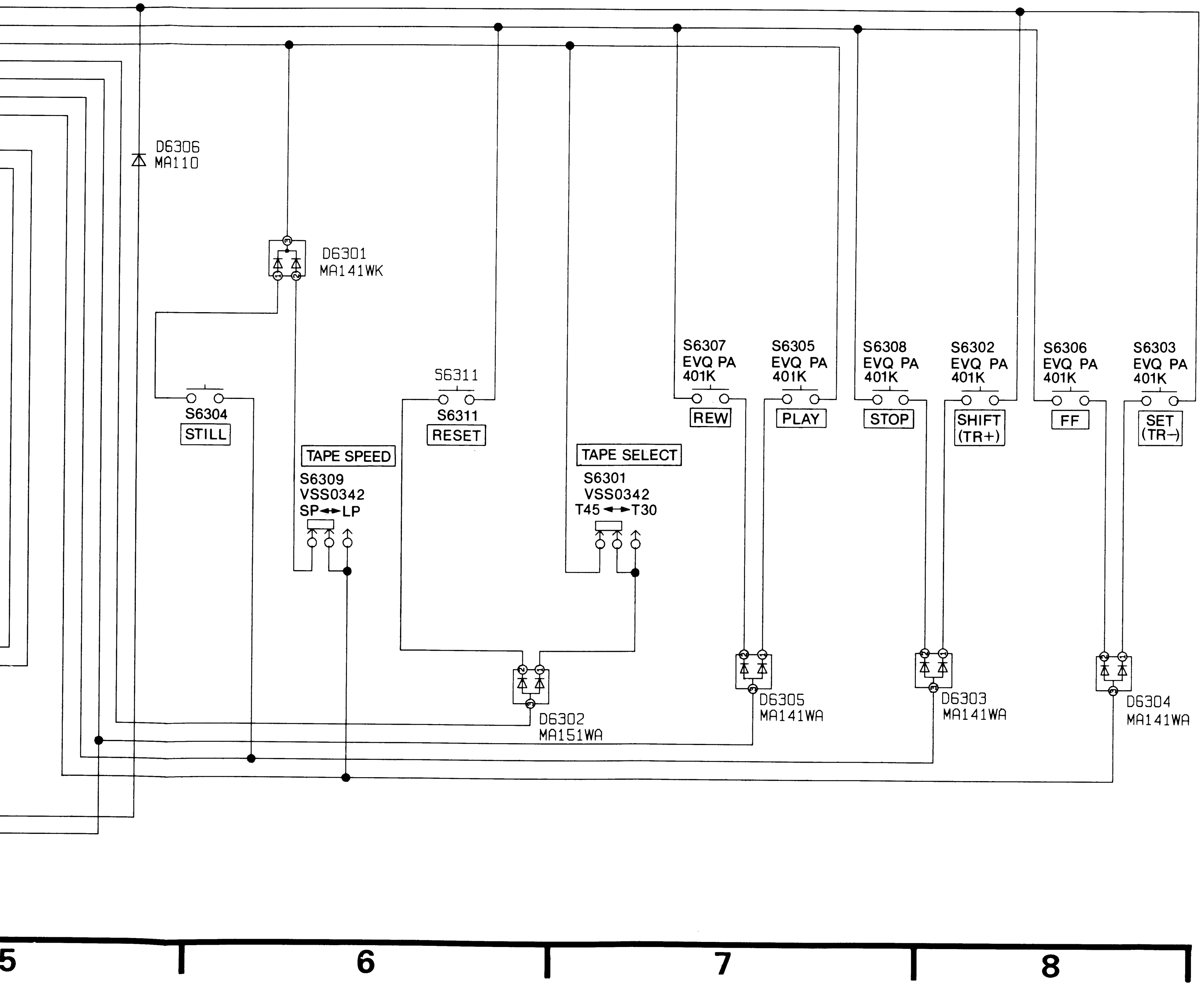

C
B
A
1
2
3
4
5
6
P2002
7
5
1
C2042
C2028
R2021
P2003
1
5
10
15
18
C2017
IC 2002
14
C2016
C2015
5
10
7
8
R2019
R2020
C2025
IC 2004
C2030
C2027
C2026
C2009
C2010
C2006
C2008
C2035
C2033
R2061
C2021
C2029
R2022
R2023
IC 2003
12
10
13
48
40
37
24
25
30
36
C2020
R2006
R2007
IC 2001
R2008
R2010
R2009
20
C2024
C2022
C2023
C2019
R2013
C2012
C2011
R2011
C2039
C2018
22
P2001
15
11
R2005
C2005
R2002
C2001
R2001
C2002
C2007
C2003
R2049
R2056
R2004
C2044
R2003
C2013
C2037
C2036
C2038
C2049
C2014
QR2002
E
B
C
C2050
QR2001
R2016
R2017
R2051
R2050
C2047
R2015
R2037
R2032
3
2
4

3-29. VTR OPERATION SCHEMATIC DIAGRAM

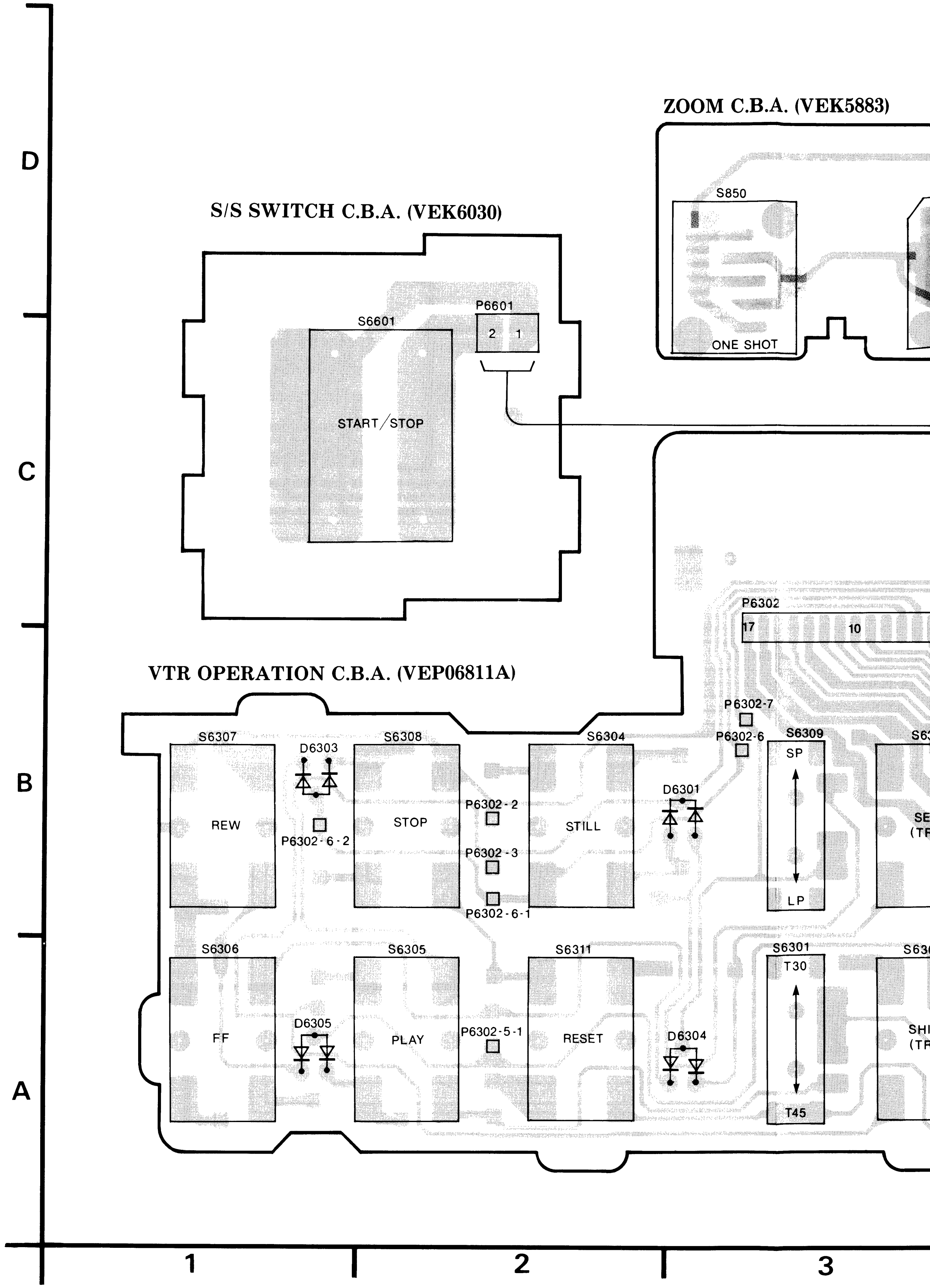

C
B
A
1
2
3
4
5
6
HIGH SPEED-W
HIGH SPEED-T
ONE SHOT
S850
VMG0358
WIDE
S851
VMG 0712
TELE
S852
VMG 0712
J5
J3
J4
J2
J1
TO OPERATION
TELE 1
SNAP 2
HS-WT 3
GND 4
WIDE 5
ZOOM C.B.A (VEK5883)
START/STOP SW
S6600
VSP0524
P6600
1 S/S SCAM
2 S/S KEY
S/S SWITCH C.B.A (VEK6030)
(TO SYSTEM CTL/Page:3-67)
P6302
SCAN1 1
SCAN2 2
SCAN3 3
KEY3 4
KEY4 5
KEY5 6
KEY6 7
8
SNAP 9
TELE 10
WIDE 11
HS-WT 12
EVF GND 13
Y OUT 14
EVF 5V 15
16
17
TO
B6002
(E-4)
D6306
MA110
D6301
MA141WK
(TO E.V.F./Page:3-62)
P6301
TO
P802
(A-1)
EVF5V 1
YOUT/VOUT 2
EVF GND 3
S6304
STILL
S6311
S6311
RESET
TAPE SPEED
S6309
VSS0342
SP◄►LP
P6304
TELE 1
SNAP 2
HS-WT 3
GND 4
WIDE 5
P6303
S/S SCAN 1
S/S KEY 2

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

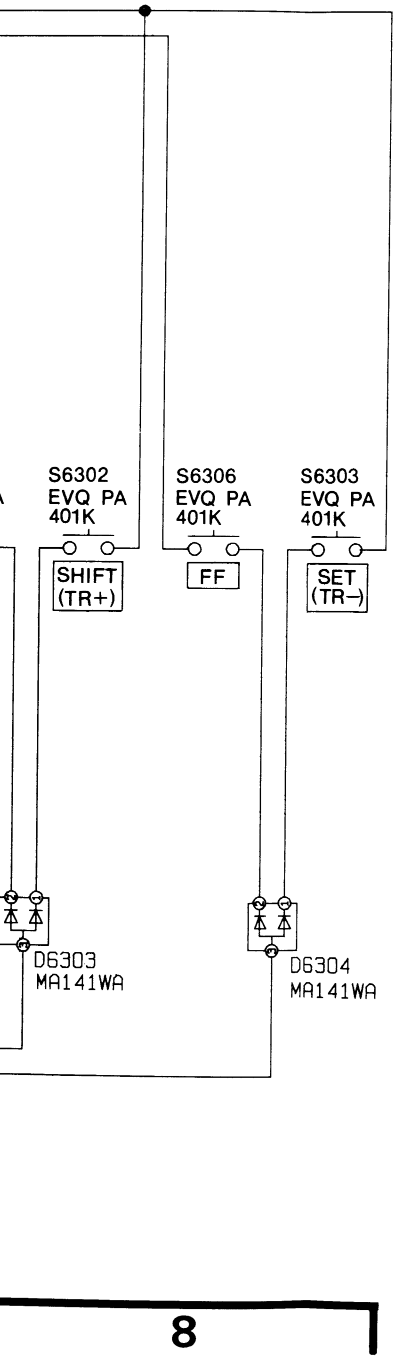
Back Page:
DRIVE Section

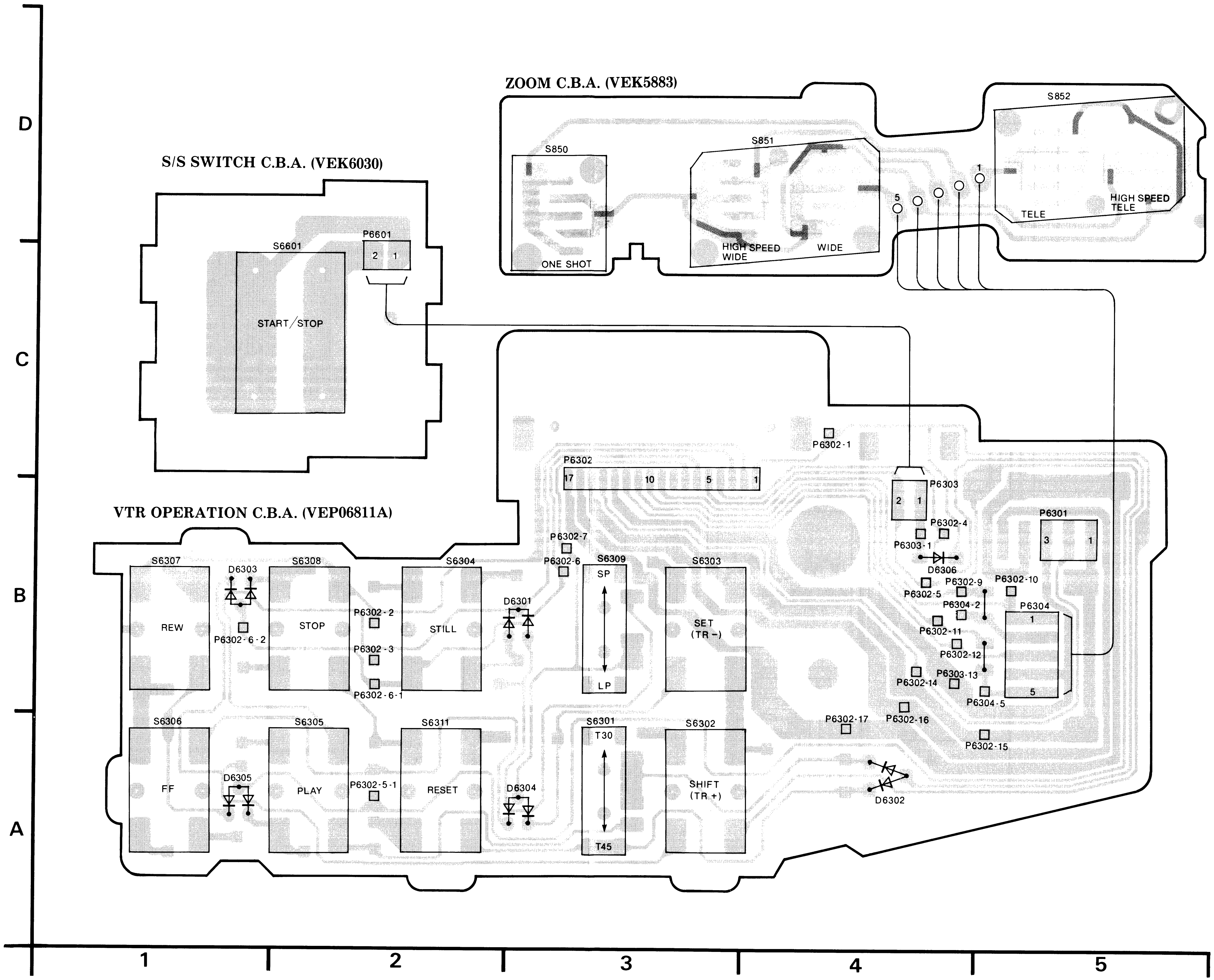

D6306
MA110
D6301
MA141WK
S6304
STILL
TAPE SPEED
S6309
VSS0342
SP↔LP
S6311
S6311
RESET
TAPE SELECT
S6301
VSS0342
T45↔T30
S6307
EVQ PA
401K
REW
S6305
EVQ PA
401K
PLAY
S6308
EVQ PA
401K
STOP
S6302
EVQ PA
401K
SHIFT
(TR+)
S6306
EVQ PA
401K
FF
S6303
EVQ PA
401K
SET
(TR−)
D6302
MA151WA
D6305
MA141WA
D6303
MA141WA
D6304
MA141WA
5
6
7
8

3-30. VTR OPERATION C.B.A. (VEP06811A)


ZOOM C.B.A. (VEK5883)
S850
ONE SHOT
S/S SWITCH C.B.A. (VEK6030)
S6601
P6601
2 1
START/STOP
VTR OPERATION C.B.A. (VEP06811A)
P6302
17
10
P6302-7
P6302-6
S6307
REW
D6303
P6302-6-2
S6308
STOP
P6302-2
P6302-3
P6302-6-1
S6304
STILL
D6301
S6309
SP
LP
S6306
FF
D6305
S6305
PLAY
P6302-5-1
S6311
RESET
D6304
S6301
T30
T45
D
C
B
A
1
2
3

3-30. VTR OPERATION C.B.A. (VEP06811A)


S6302
EVQ PA
401K
SHIFT
(TR+)
S6306
EVQ PA
401K
FF
S6303
EVQ PA
401K
SET
(TR–)
D6303
MA141WA
D6304
MA141WA
8

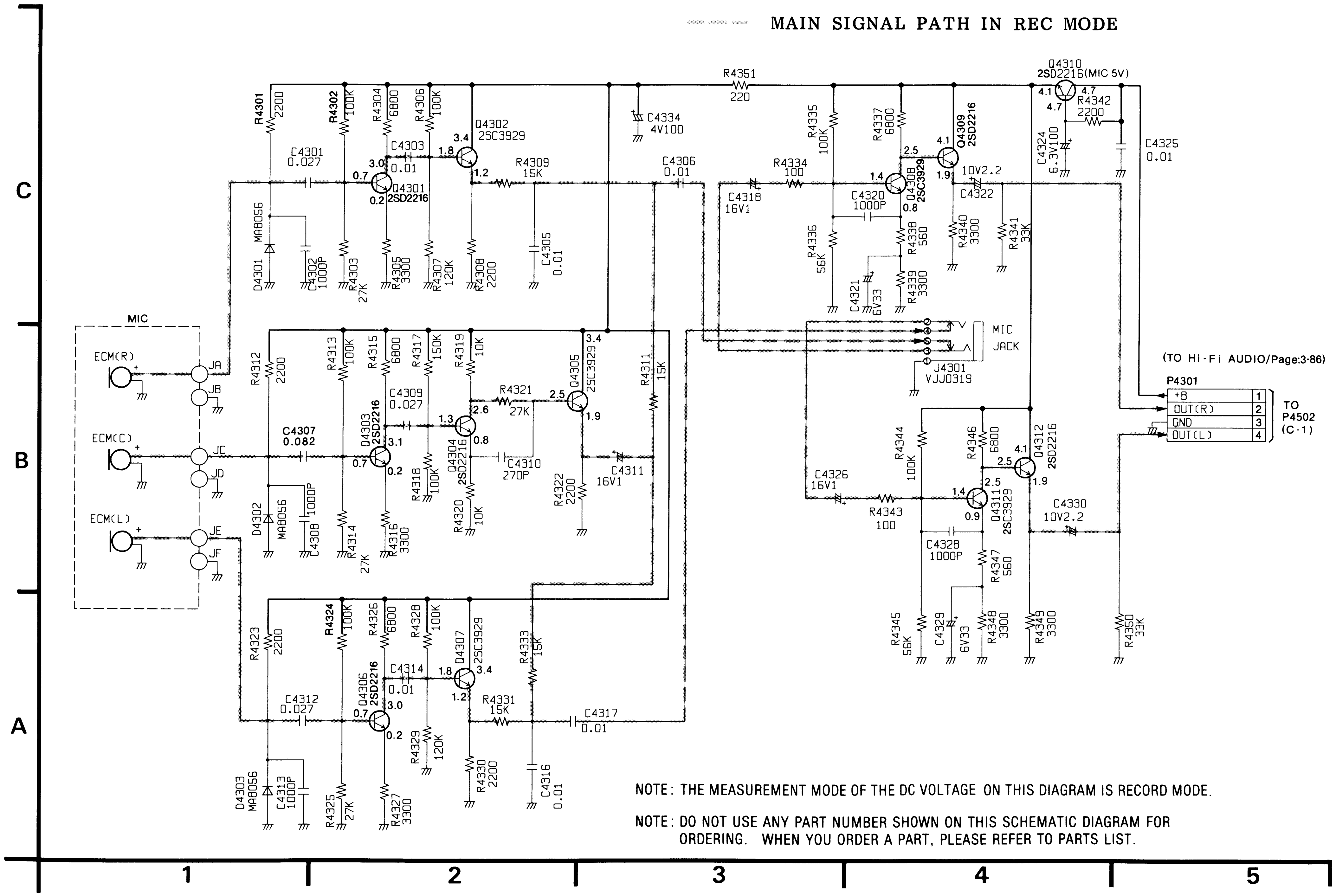

D
C
B
A
1
2
3
4
5
ZOOM C.B.A. (VEK5883)
S850
ONE SHOT
S851
HIGH SPEED
WIDE
WIDE
S852
TELE
HIGH SPEED
TELE
5
1
S/S SWITCH C.B.A. (VEK6030)
S6601
START/STOP
P6601
2
1
VTR OPERATION C.B.A. (VEP06811A)
P6302-1
P6302
17
10
5
1
P6303
2
1
P6302-4
P6303-1
D6306
P6301
3
1
P6302-7
P6302-6
S6307
REW
D6303
P6302-6-2
S6308
STOP
P6302-2
P6302-3
P6302-6-1
S6304
STILL
D6301
S6309
SP
LP
S6303
SET
(TR –)
P6302-9
P6302-5
P6302-10
P6304-2
P6304
1
5
P6302-11
P6302-12
P6303-13
P6302-14
P6304-5
P6302-17
P6302-16
P6302-15
S6306
FF
D6305
S6305
PLAY
P6302-5-1
S6311
RESET
D6304
S6301
T30
T45
S6302
SHIFT
(TR +)
D6302

VTR OPERATION C.B.A.	
Connector	
P6301	B-5
P6302	C-3
P6303	C-4
P6304	B-5
P6601	D-2

ADDRESS INFORMATION

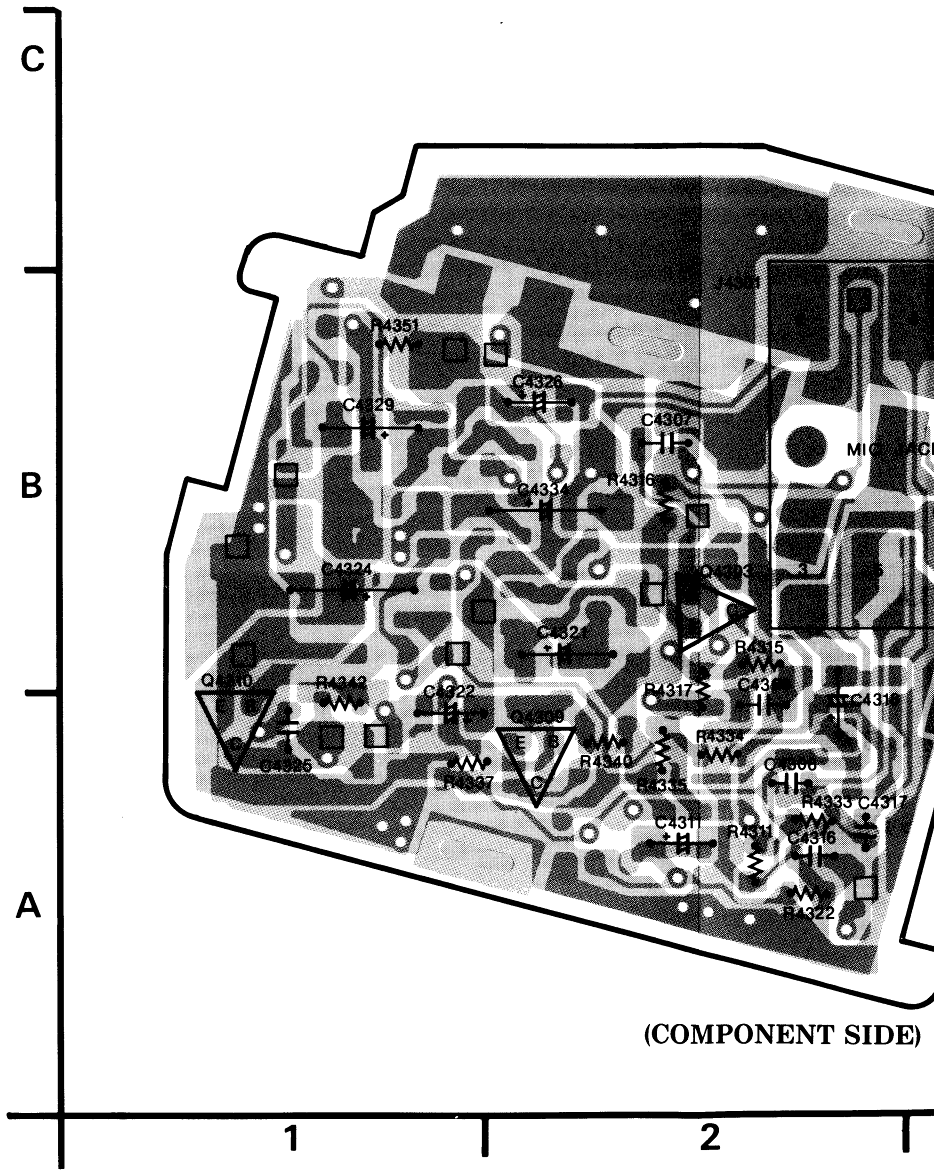
3-31. MIC SCHEMATIC DIAGRAM

3-32. MIC C.B.A. (VEP04382A)


MAIN SIGNAL PATH IN REC MODE
MIC
ECM(R)
ECM(C)
ECM(L)
JA
JB
JC
JD
JE
JF
R4301 2200
C4301 0.027
D4301 MA8056
C4302 1000P
R4302 100K
R4303 27K
R4304 6800
C4303 0.01
Q4301 2SD2216
R4305 3300
R4306 100K
R4307 120K
Q4302 2SC3929
R4308 2200
R4309 15K
C4305 0.01
C4334 4V100
C4306 0.01
R4351 220
C4318 16V1
R4334 100
R4335 100K
R4336 56K
C4320 1000P
C4321 6V33
R4337 6800
Q4308 2SC3929
R4338 560
R4339 3300
Q4309 2SD2216
R4340 3300
C4322 10V2.2
R4341 33K
C4324 6.3V100
Q4310 2SD2216(MIC 5V)
R4342 2200
C4325 0.01
R4312 2200
C4307 0.082
D4302 MA8056
C4308 1000P
R4313 100K
R4314 27K
R4315 6800
Q4303 2SD2216
R4316 3300
C4309 0.027
R4317 150K
R4318 100K
R4319 10K
Q4304 2SD2216
R4320 10K
C4310 270P
R4321 27K
Q4305 2SC3929
R4322 2200
C4311 16V1
R4311 15K
MIC JACK
J4301 VJJ0319
C4326 16V1
R4343 100
R4344 100K
R4345 56K
C4328 1000P
C4329 6V33
R4346 6800
Q4311 2SC3929
R4347 560
R4348 3300
Q4312 2SD2216
R4349 3300
C4330 10V2.2
R4350 33K
(TO Hi-Fi AUDIO/Page:3-86)
P4301
+B 1
OUT(R) 2
GND 3
OUT(L) 4
TO P4502 (C-1)
R4323 2200
C4312 0.027
D4303 MA8056
C4313 1000P
R4324 100K
R4325 27K
R4326 6800
Q4306 2SD2216
R4327 3300
C4314 0.01
R4328 100K
R4329 120K
Q4307 2SC3929
R4330 2200
R4331 15K
R4333 15K
C4316 0.01
C4317 0.01
C
B
A
1
2
3
4
5

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS RECORD MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.


C
B
A
1
2
R4351
J4301
C4329
C4328
C4307
MIC JACK
C4334
R4316
C4324
Q4303
R4315
Q4310
R4342
C4322
Q4309
R4340
R4317
C4325
R4337
R4335
C4311
R4333
C4317
C4316
R4322

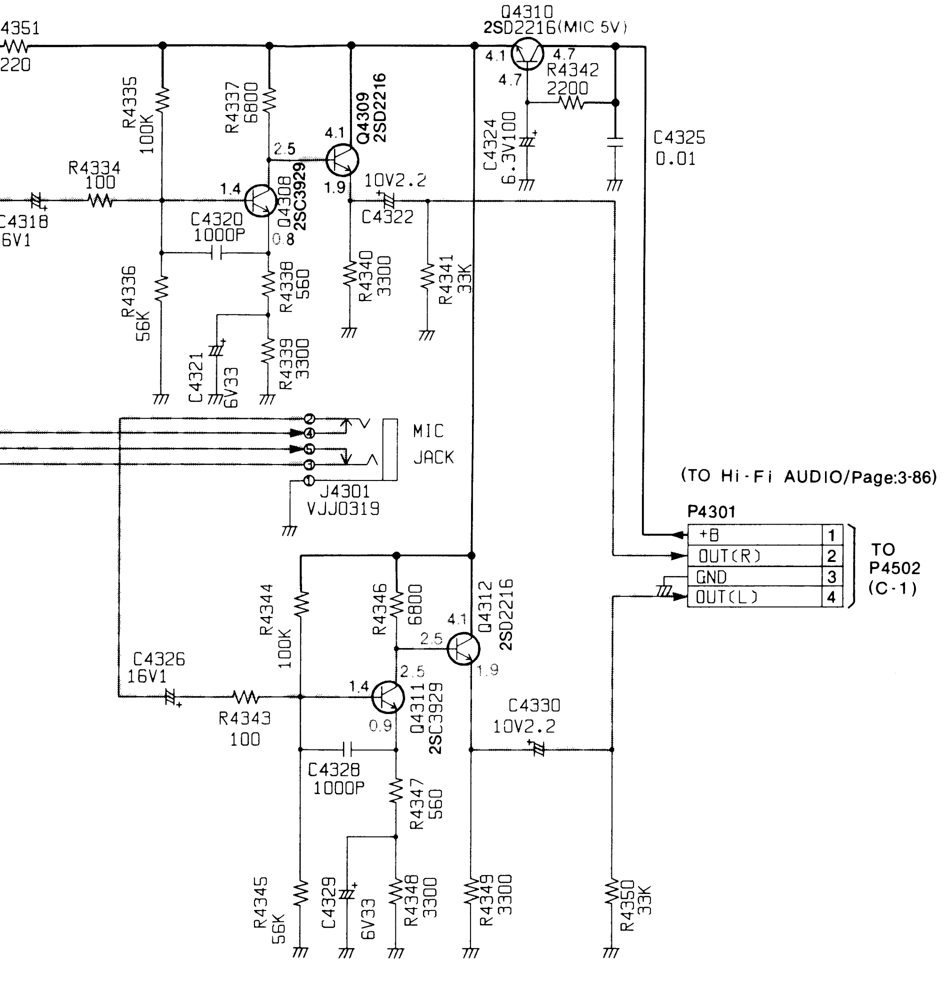
(COMPONENT SIDE)

3-32. MIC C.B.A. (VEP04382A)

MIC C.B.A.	
Transistor	
Q4301	B-4
Q4302	A-4
Q4303	B-2
Q4304	B-4
Q4305	A-4
Q4306	A-3
Q4307	A-4
Q4308	B-5
Q4309	A-2
Q4310	A-1
Q4311	B-4
Q4312	B-5
Connector	
P4301	B-5

ADDRESS INFORMATION

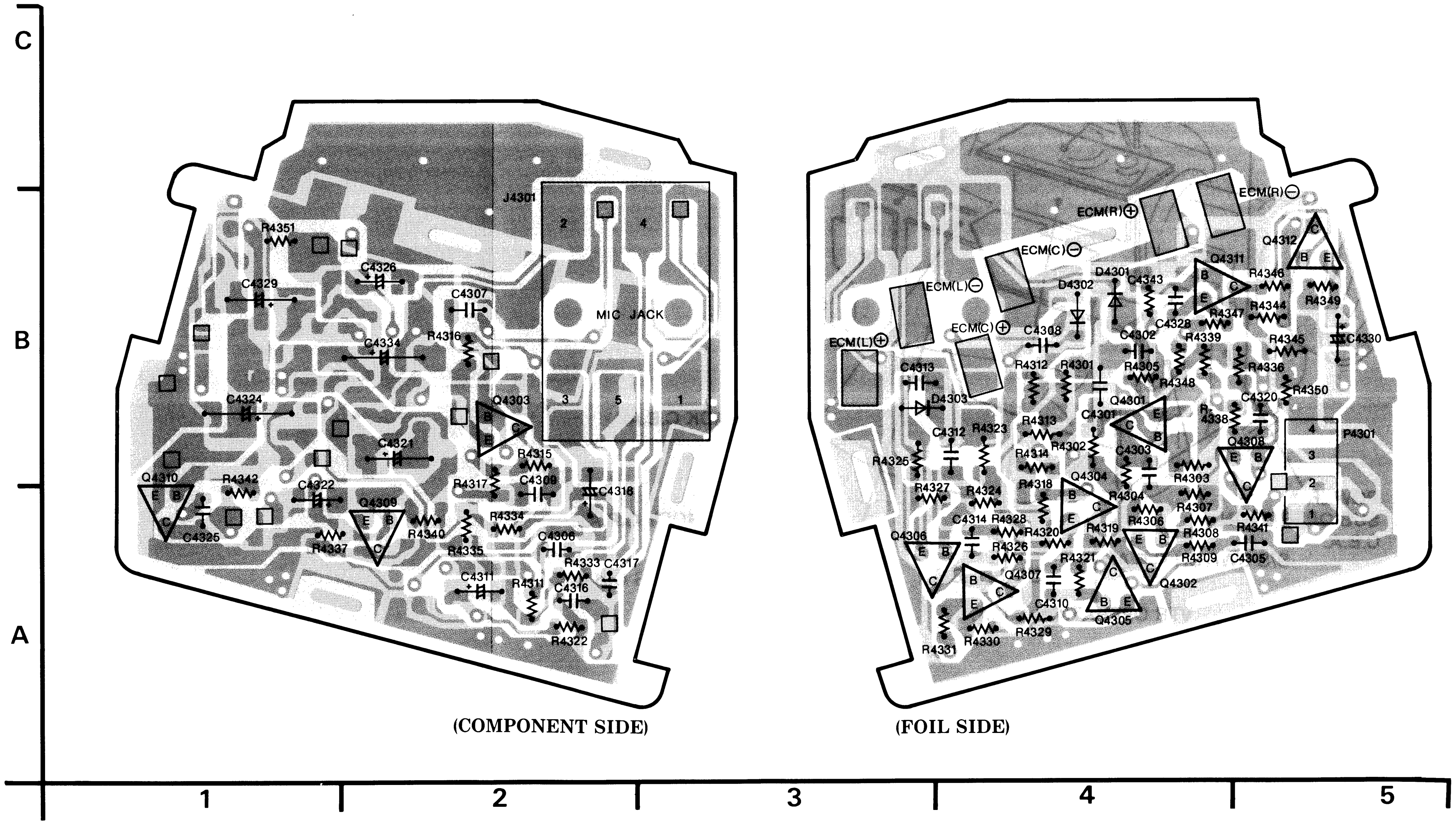
MAIN SIGNAL PATH IN REC MODE


4351
220
Q4310
2SD2216(MIC 5V)
4.1
4.7
4.7
R4342
2200
R4335
100K
R4337
6800
Q4309
2SD2216
4.1
2.5
1.9
10V2.2
C4322
C4324
6.3V100
C4325
0.01
R4334
100
C4318
6V1
1.4
Q4308
2SC3929
C4320
1000P
0.8
R4336
56K
R4338
560
R4340
3300
R4341
33K
C4321
6V33
R4339
3300
MIC
JACK
J4301
VJJ0319
(TO Hi-Fi AUDIO/Page:3-86)
P4301
+B 1
OUT(R) 2
GND 3
OUT(L) 4
TO
P4502
(C-1)
R4344
100K
R4346
6800
Q4312
2SD2216
4.1
2.5
1.9
C4326
16V1
R4343
100
1.4
2.5
Q4311
2SC3929
0.9
C4330
10V2.2
C4328
1000P
R4347
560
R4345
56K
C4329
6V33
R4348
3300
R4349
3300
R4350
33K

ASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS RECORD MODE.

USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
NG. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

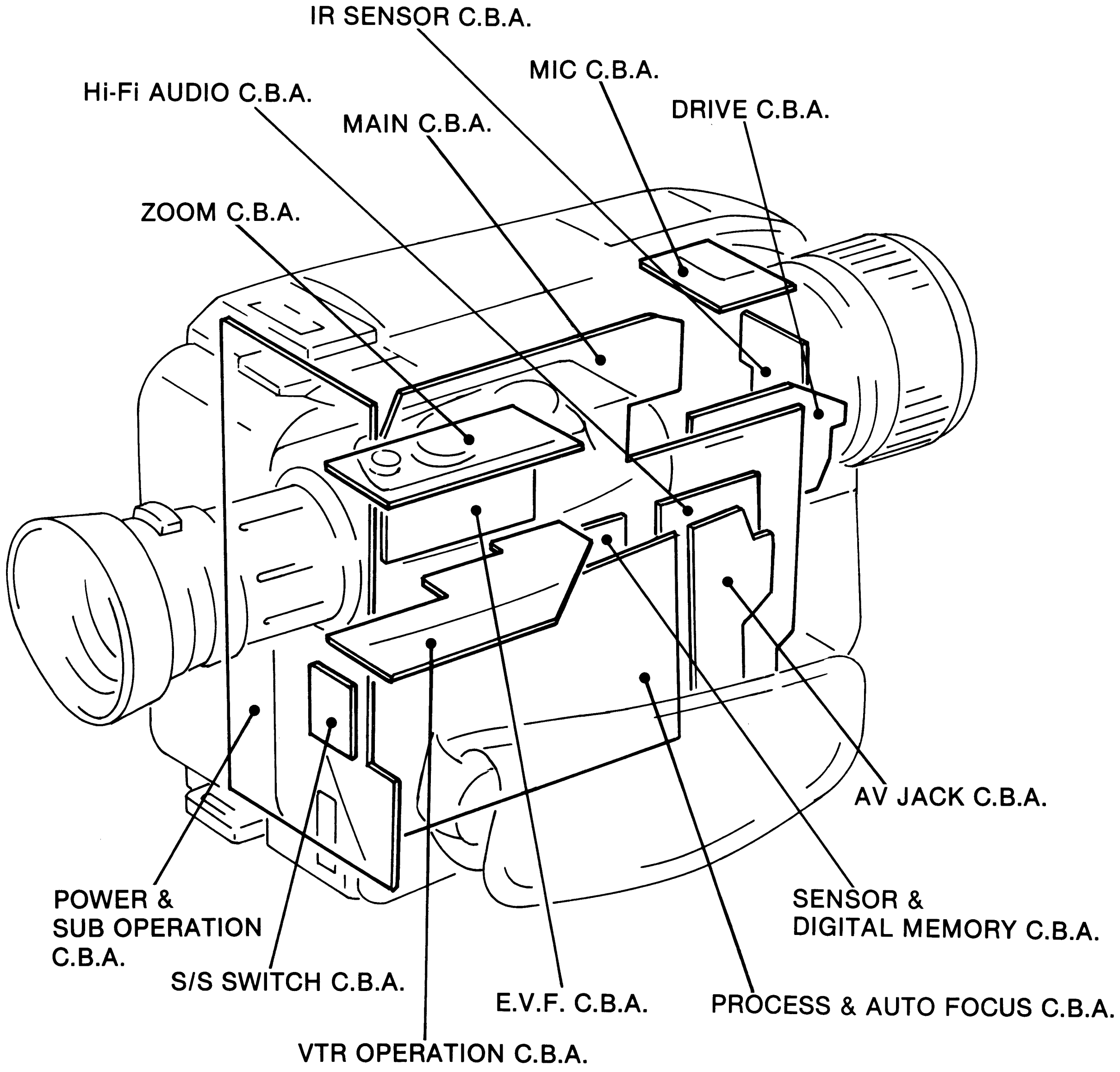
4 5


C
B
A
1
2
3
4
5
J4301
2
4
3
5
1
MIC JACK
R4351
C4326
C4329
C4307
C4334
R4316
C4324
Q4303
C4321
R4315
Q4310
R4342
C4322
C4309
R4317
C4318
C4325
Q4309
R4340
R4334
R4337
R4335
C4306
R4333
C4317
C4311
R4311
C4316
R4322
ECM(R)⊕
ECM(R)⊖
Q4312
Q4311
ECM(C)⊖
D4301
C4343
ECM(L)⊖
D4302
R4346
R4344
R4349
ECM(C)⊕
C4308
R4347
C4328
ECM(L)⊕
C4302
R4339
R4345
C4330
C4313
R4312
R4301
R4305
R4348
R4336
D4303
Q4301
C4320
R4350
C4312
R4323
R4313
C4301
R4338
P4301
R4314
R4302
C4303
Q4308
R4325
Q4304
R4303
R4327
R4324
R4318
R4304
R4307
C4314
R4328
R4320
R4306
R4341
Q4306
R4319
R4308
R4326
R4321
R4309
C4305
Q4307
Q4302
C4310
R4331
R4330
R4329
Q4305

(COMPONENT SIDE) (FOIL SIDE)

Next Page:
C.B. LAYOUT Section

3-33. CIRCUIT BOARD LAYOUT


IR SENSOR C.B.A.
MIC C.B.A.
Hi-Fi AUDIO C.B.A.
MAIN C.B.A.
DRIVE C.B.A.
ZOOM C.B.A.
AV JACK C.B.A.
POWER &
SUB OPERATION
C.B.A.
SENSOR &
DIGITAL MEMORY C.B.A.
S/S SWITCH C.B.A.
E.V.F. C.B.A.
PROCESS & AUTO FOCUS C.B.A.
VTR OPERATION C.B.A.

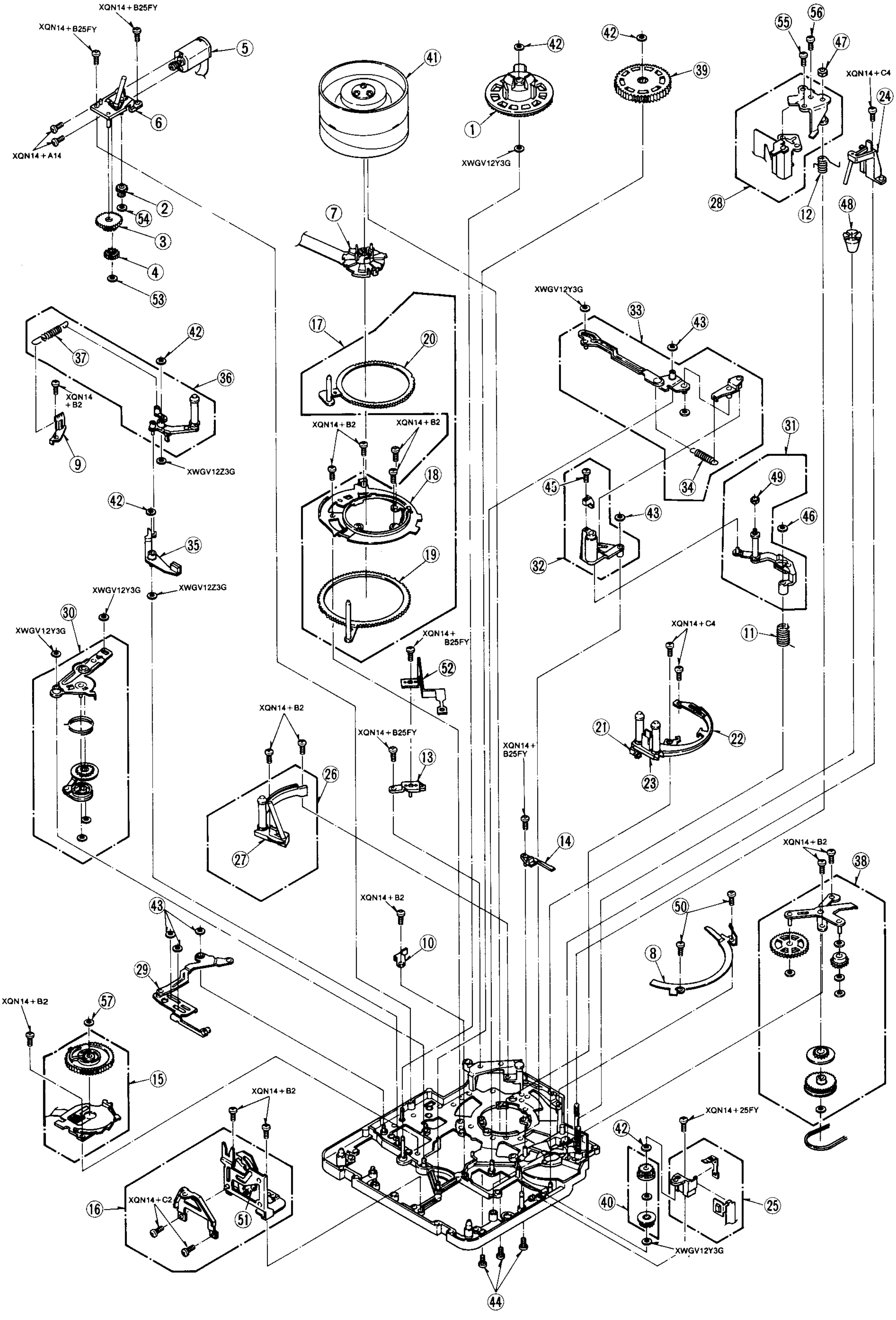
.A.

C.B.A.

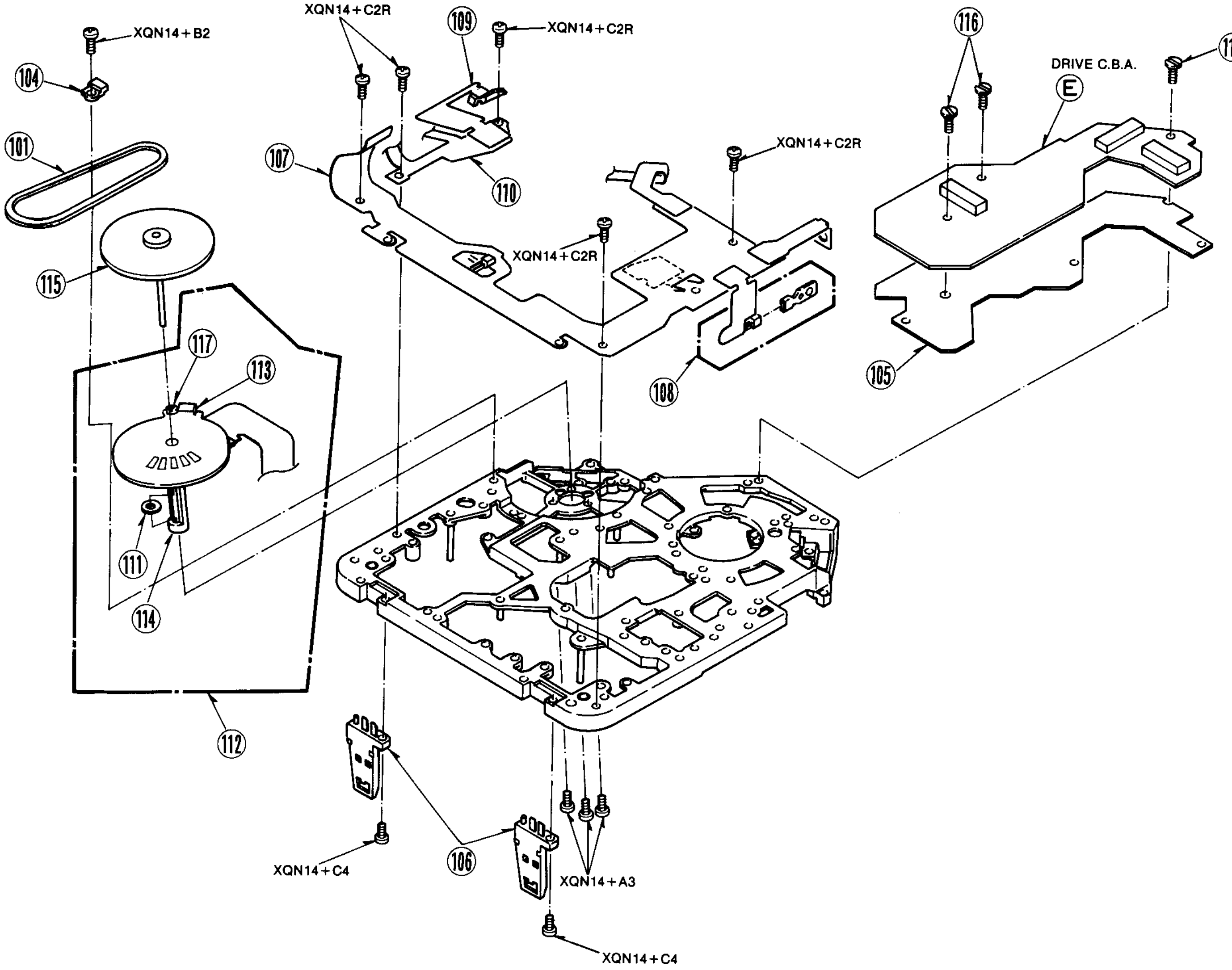
S C.B.A.

SECTION 4
EXPLODED VIEWS & PARTS LIST

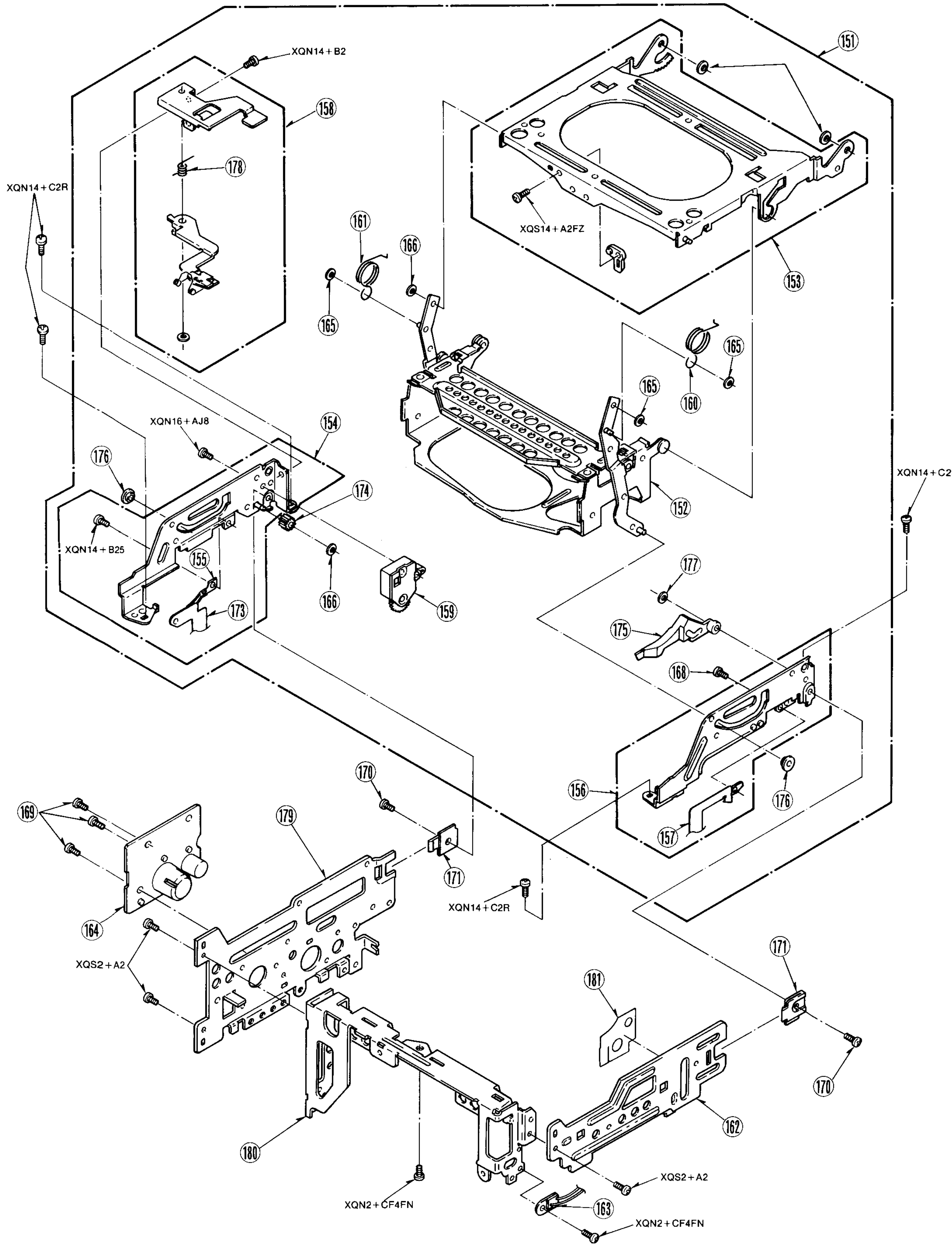
4-1. EXPLODED VIEWS ❶ VTR MECHANISM SECTION (1)


XQN14+B25FY
XQN14+B25FY
⑤
⑥
XQN14+A14
②
(54)
③
④
(53)
㊶
㊷
①
XWGV12Y3G
㊷
㊴
(55)
(56)
㊼
XQN14+C4
㉔
㉘
⑫
㊽
⑦
⑰
⑳
XQN14+B2
XQN14+B2
⑱
⑲
㊲
㊷
㊱
XQN14+B2
⑨
XWGV12Z3G
㊷
㉟
XWGV12Y3G
XWGV12Z3G
㉚
XWGV12Y3G
XWGV12Y3G
㉝
㊸
㉞
㉛
㊾
㊺
㊸
㊻
㉜
⑪
XQN14+C4
㉑
㉒
㉓
XQN14+B25FY
(52)
XQN14+B2
㉖
㉗
XQN14+B25FY
⑬
XQN14+B25FY
⑭
XQN14+B2
⑩
XQN14+B2
㊳
㊿
⑧
㊸
㉙
XQN14+B2
(57)
⑮
XQN14+B2
XQN14+C2
⑯
(51)
㊷
XQN14+25FY
㊵
㉕
XWGV12Y3G
㊹

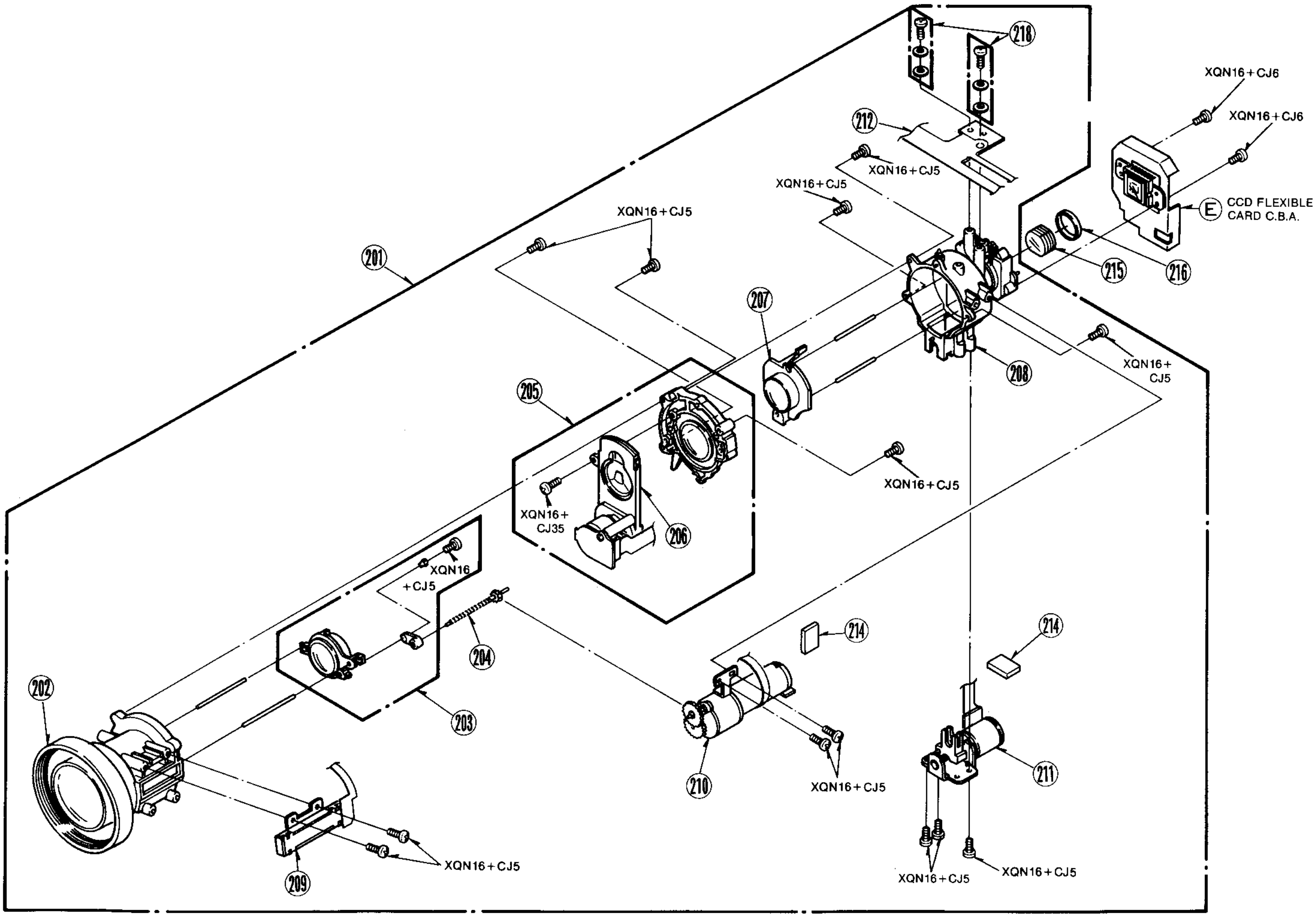
❷ VTR MECHANISM SECTION (2)


XQN14+B2
104
101
115
117
113
111
114
112
XQN14+C2R
109
XQN14+C2R
107
110
XQN14+C2R
XQN14+C2R
108
116
DRIVE C.B.A.
E
105
106
XQN14+C4
XQN14+A3
XQN14+C4

❸ VTR MECHANISM SECTION (3)

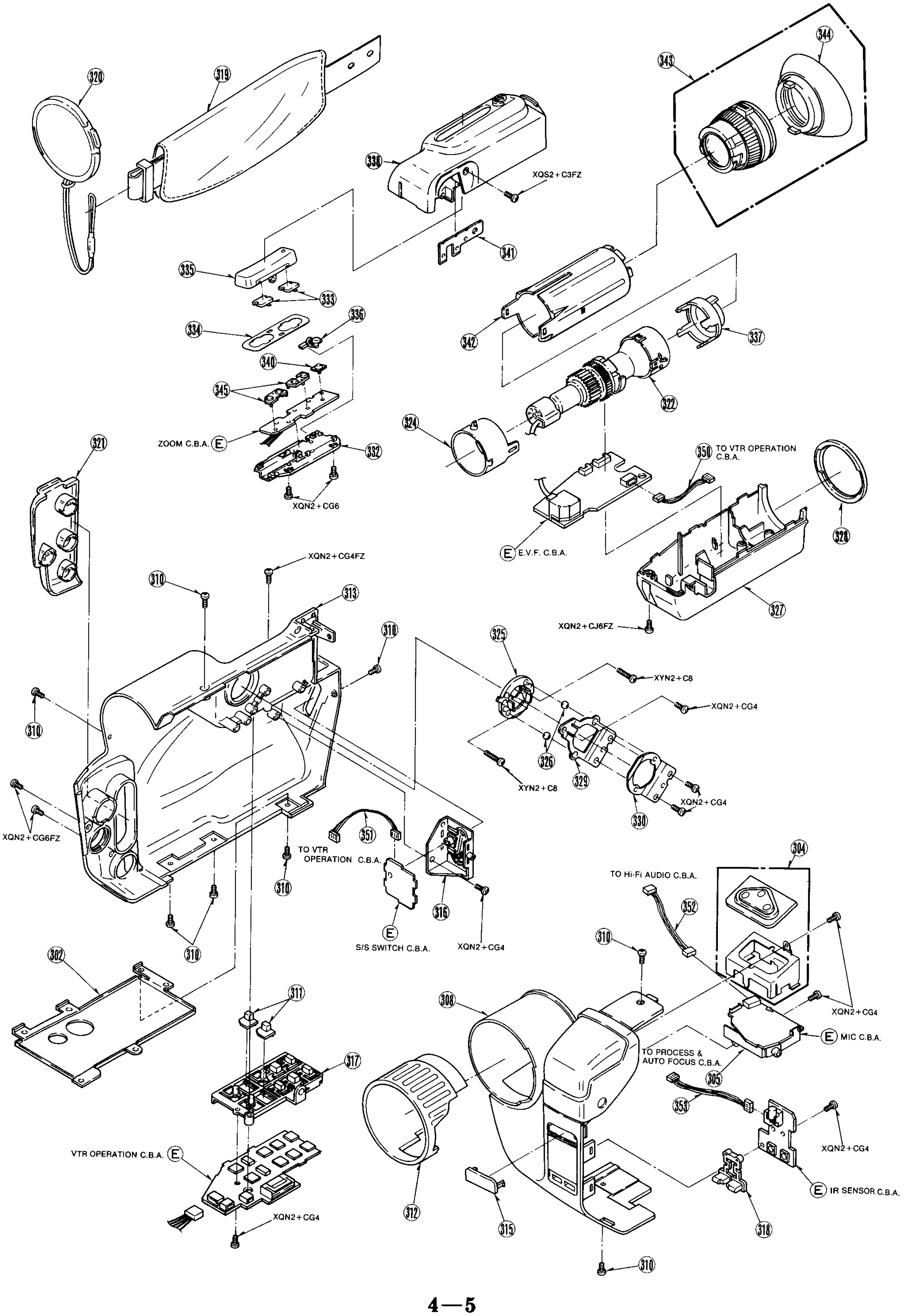

151
XQN14+B2
158
178
XQN14+C2R
161
166
165
XQS14+A2FZ
153
165
160
165
152
XQN16+AJ8
154
176
174
XQN14+B25
155
173
166
159
XQN14+C2R
177
175
168
156
176
157
170
179
169
171
164
XQN14+C2R
XQS2+A2
171
181
170
162
180
XQS2+A2
XQN2+CF4FN
163
XQN2+CF4FN

❹ CAMERA LENS SECTION

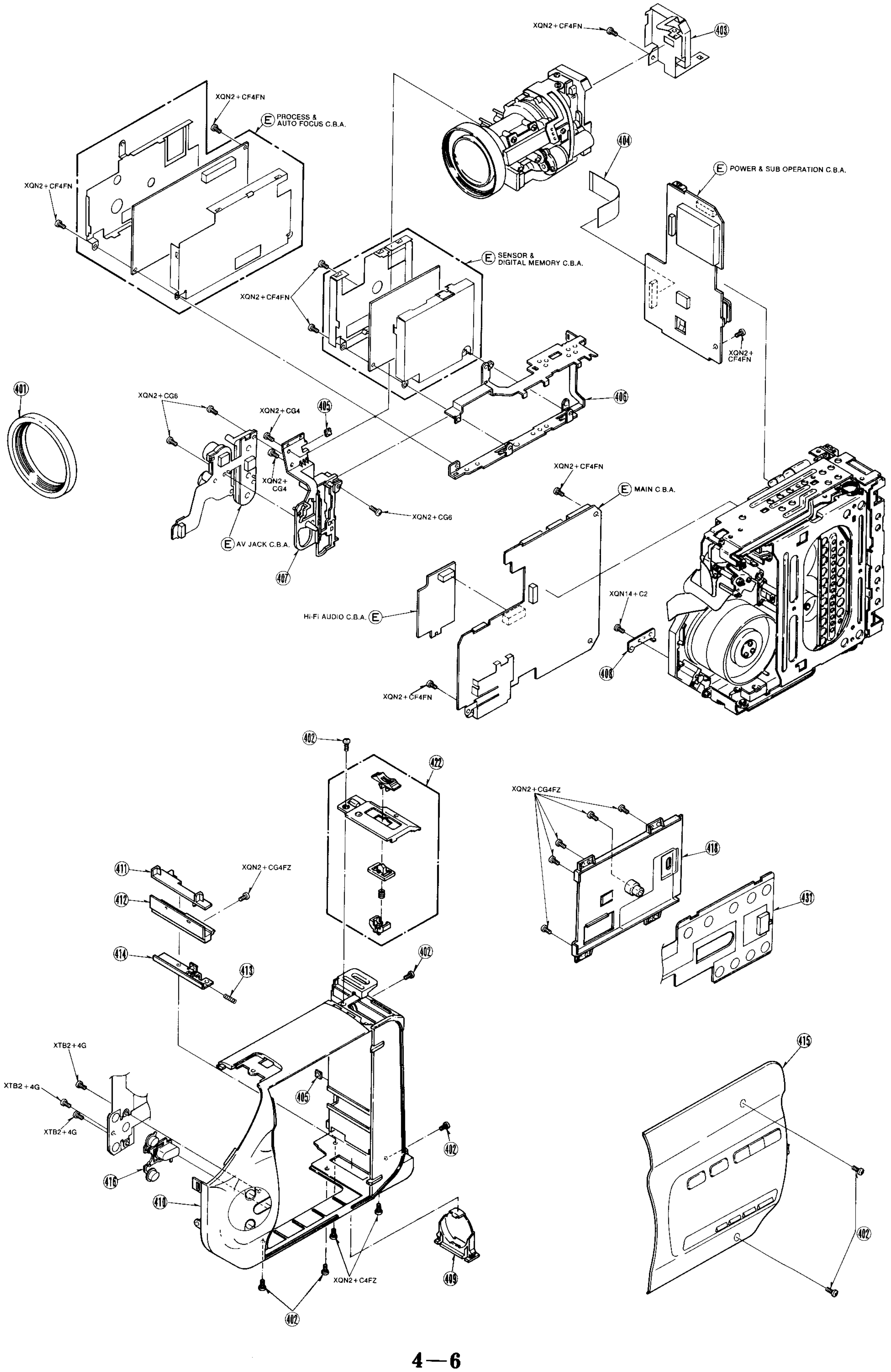


218
212
XQN16+CJ6
XQN16+CJ6
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
E CCD FLEXIBLE CARD C.B.A.
201
215
216
207
208
XQN16+ CJ5
205
XQN16+CJ5
XQN16+ CJ35
206
XQN16 +CJ5
204
214
214
202
203
210
XQN16+CJ5
211
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
209

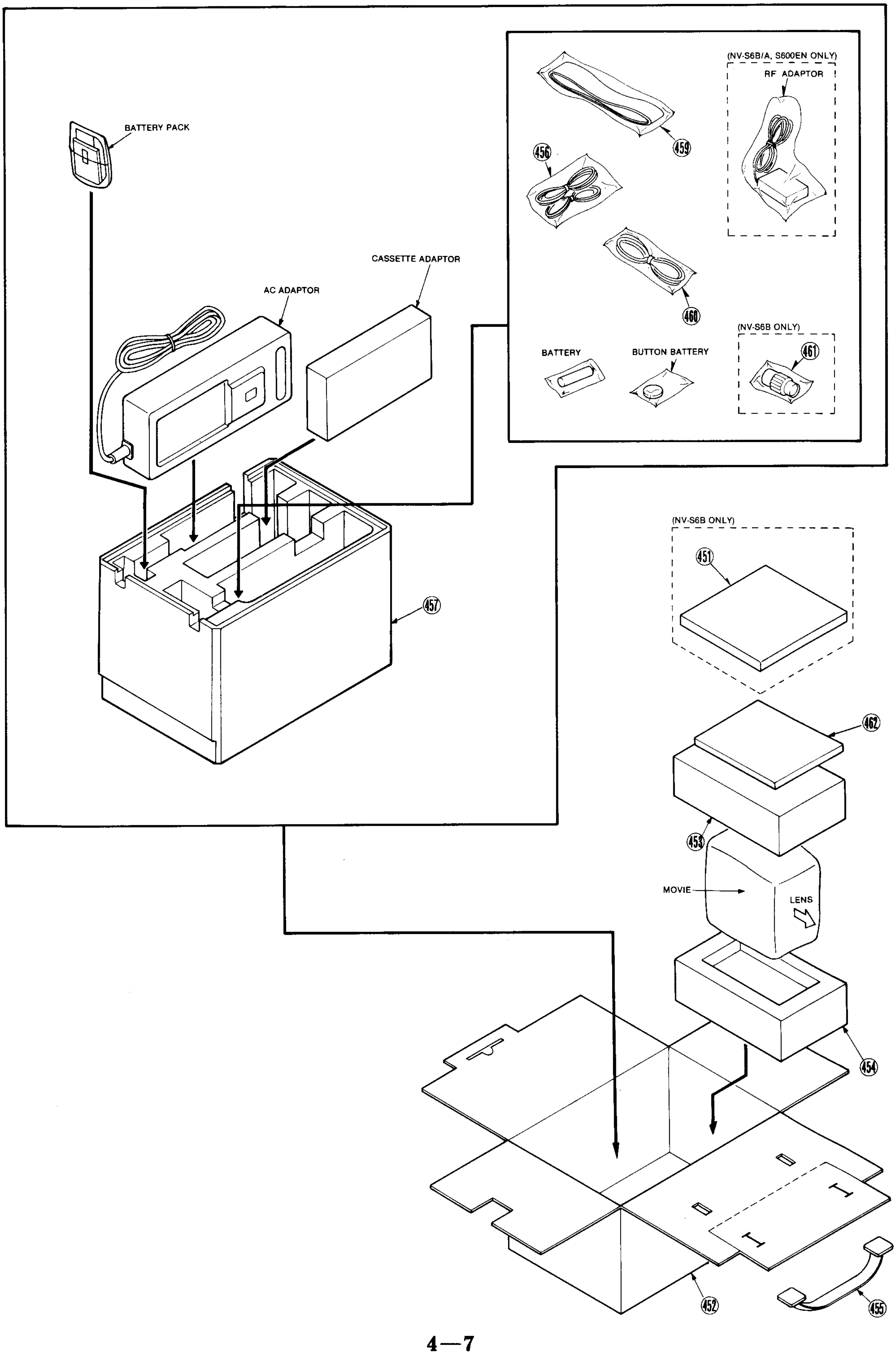
❺ FRAME & CASING PARTS SECTION (1)


320
319
343
344
338
XQS2+C3FZ
341
335
333
334
336
342
337
340
345
322
324
ZOOM C.B.A. Ⓔ
332
350 TO VTR OPERATION C.B.A.
321
XQN2+CG6
Ⓔ E.V.F. C.B.A.
328
XQN2+CG4FZ
310
313
327
XQN2+CJ6FZ
310
325
XYN2+C8
XQN2+CG4
310
326
329
XYN2+C8
330
XQN2+CG4
XQN2+CG6FZ
351
TO VTR OPERATION C.B.A.
310
316
Ⓔ S/S SWITCH C.B.A.
XQN2+CG4
310
304
TO Hi-Fi AUDIO C.B.A.
352
310
302
311
308
XQN2+CG4
Ⓔ MIC C.B.A.
TO PROCESS & AUTO FOCUS C.B.A.
305
317
353
XQN2+CG4
VTR OPERATION C.B.A. Ⓔ
Ⓔ IR SENSOR C.B.A.
XQN2+CG4
312
315
318
310

❻ FRAME & CASING PARTS SECTION (2)


XQN2+CF4FN
403
XQN2+CF4FN
E PROCESS & AUTO FOCUS C.B.A.
XQN2+CF4FN
404
E POWER & SUB OPERATION C.B.A.
E SENSOR & DIGITAL MEMORY C.B.A.
XQN2+CF4FN
XQN2+CF4FN
401
XQN2+CG6
XQN2+CG4
405
406
XQN2+CG4
XQN2+CG6
E AV JACK C.B.A.
407
XQN2+CF4FN
E MAIN C.B.A.
Hi-Fi AUDIO C.B.A. E
XQN14+C2
408
XQN2+CF4FN
402
422
XQN2+CG4FZ
418
411
412
XQN2+CG4FZ
431
414
413
402
XTB2+4G
XTB2+4G
XTB2+4G
405
415
402
416
410
XQN2+C4FZ
409
402
402

❼ PACKING PARTS & ACCESSORIES SECTION


(NV-S6B/A, S600EN ONLY)
RF ADAPTOR
459
456
460
(NV-S6B ONLY)
BATTERY
BUTTON BATTERY
461
BATTERY PACK
CASSETTE ADAPTOR
AC ADAPTOR
457
(NV-S6B ONLY)
451
462
453
MOVIE
LENS
454
452
455

4-2. MECHANICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VDR0226	REEL BASE (S)	1	
2(1)		VDG0821	BRAKE GEAR (A)	1	
3(1)		VDG0822	BRAKE GEAR (B)	1	
4(1)		VDG0823	BRAKE GEAR (C)	1	
5(1)		VEM0417	LOADING MOTOR (1) U.	1	
6(1)		VXA4527	MOTOR HOLDER U.	1	
7(1)		VEP03867A	RT CONNECTOR U.	1	
8(1)		VMA8502	T-RING SLIDER	1	
9(1)		VMA8505	TEN-REG.SPRING HOOK	1	
10(1)		VMA8532	PENDULUM ARM HOLDER	1	
11(1)		VMB2362	T3 ARM SPRING	1	
12(1)		VMB2365	AC HEAD SPRING	1	
13(1)		VMD1848	S-BOAT GUIDE	1	
14(1)		VMD1851	T-BOAT GUIDE	1	
15(1)		VSR0088	MODE SWITCH U.	1	
16(1)		VXA4515	LOCK BASE U.	1	
17(1)		VXA4517	LOADING RING U.	1	
18(1)		VMD1824	RING GUIDE	1	
19(1)		VXA4518	T-RING U.	1	
20(1)		VXA4519	S-RING U.	1	
21(1)		VEK5549	LED U.	1	
22(1)		VMD1828	T-RAIL	1	
23(1)		VXA4776	T-BOAT U.	1	
24(1)		VXA4528	T4 POST U.	1	
25(1)		VXA4530	T-REEL SENSOR U.	1	
26(1)		VXA4532	S-RAIL U.	1	
27(1)		VXA4525	S-BOAT U.	1	
28(1)		VXA4553	AC HEAD U.	1	
29(1)		VXL2130	EJECT LEVER U.	1	
30(1)		VXL2133	SWING ARM U.	1	
31(1)		VXL2135	T3 ARM U.	1	
32(1)		VXL2138	PINCH ARM U.	1	
33(1)		VXL2140	PINCH DRIVE ARM U.	1	
34(1)		VMB2363	PINCH PRESSURE SPRING	1	
35(1)		VXL2144	PAD ARM U.	1	
36(1)		VXL2145	TEN-REG. ARM U.	1	
37(1)		VMB2364	TEN-REG. SPRING	1	
38(1)		VXL2147	IDLER U.	1	
39(1)		VXP1308	RELAY GEAR U.	1	
40(1)		VXP1313	T-DRIVE GEAR U.	1	
41(1)		VEG1010	CYLINDER U.	1	
42(1)		VMX2027	WASHER	5	
43(1)		VMX2026	WASHER	5	
44(1)		VHD0682	SCREW	3	
45(1)		VHD0715	SCREW	1	
46(1)		VMX2026	WASHER	1	
47(1)		VHN0047	NUT	1	
48(1)		VHN0175	ADJUST NUT	1	
49(1)		VHN0172	T3 POST NUT	1	
50(1)		VHD0711	SCREW	3	
51(1)		VMB2369	LOCK SPRING	1	
52(1)		VXS0119	EARTH BRUSH U.	1	
53(1)		VMX2027	WASHER		
54(1)		VMX2051	WASHER		
55(1)		VHD0536	SCREW		
56(1)		VHD0526	SCREW		
57(1)		VMX2026	WASHER		
101(2)		VDV0232	CAPSTAN BELT	1	
104(2)		VMD1846	CAPSTAN STOPPER	1	
105(2)		VMZ1871	BARRIER	1	
106(2)		VSH0055	REC SAFETY SW U.	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
107(2)		VWJ0580	MECH.FLEXIBLE CARD	1	
108(2)		VXA4511	PHOTO (L) U.	1	
109(2)		VXA4514	PHOTO (R) U.	1	
110(2)		VXA4530	T-REEL SENSOR U.	1	
111(2)		VDB1129	LOWER BEARING	1	
112(2)		VEK5516	STATOR U.	1	
113(2)		VBK0059	MR HEAD	1	
114(2)		VXD0134	HOUSING U.	1	
115(2)		VXP1303	ROTOR U.	1	
116(2)		VHD0681	SCREW	3	
117(2)		VHD0593	SCREW	1	
151(3)		VXA4861	GARAGE U.	1	
152(3)		VXA4506	HOLDER U.	1	
153(3)		VXA4863	GARAGE (1) U.	1	
154(3)		VXA4510	STAND (L) U.	1	
155(3)		VXA4511	PHOTO (L) U.	1	
156(3)		VXA4513	STAND (R) U.	1	
157(3)		VXA4514	PHOTO (R) U.	1	
158(3)		VXL2222	TAPE GUIDE U.	1	
159(3)		VXP1315	DUMPER	1	
160(3)		VMB2367	UP SPRING (R)	1	
161(3)		VMB2368	UP SPRING (L)	1	
162(3)		VMP3759	UPPER FRAME	1	
163(3)		VEK5550	DEW SENSOR	1	
164(3)		VMD1800	TRIPOD FRAME	1	
165(3)		VMX1042	WASHER	3	
166(3)		VMX1061	WASHER	2	
168(3)		VHD0706	SCREW	1	
169(3)		VHD0710	SCREW	3	
170(3)		VHD0713	SCREW	2	
171(3)		VGQ2736	INSULATION PIECE (A)	2	
173(3)		VWJ0548	PHOTO FLEX.CARD	1	
174(3)		VDG0827	DUMPER RELAY GEAR	1	
175(3)		VML2580	TAPE OPEN LEVER	1	
176(3)		VDP1406	ARM HOLDER	2	
177(3)		VMX1042	WASHER	1	
178(3)		VMB2498	TAPE GUIDE SPRING	1	
179(3)		VMP3887	LOWER FRAME	1	
180(3)		VMP3886	REAE FRAME	1	
181(3)		VMZ2023	INSULATION BARRIER	1	
201(4)		VXW0112	LENS U.	1	
202(4)		VXQ0263	LENS MAIN U.	1	
203(4)		VXP1300	2ND MOVING FRAME U.	1	
204(4)		VXP1302	SCREW SHAFT U.	1	
205(4)		VXQ0264	3RD U.	1	
206(4)		VXL2126	IRIS U.	1	
207(4)		VXP1301	4TH MOVING FRAME U.	1	
208(4)		VMD1815	MASTER FLANGE	1	
209(4)		EVAJH4J03B14	ZOOM ENCODER U.	1	
210(4)		VEM0421	ZOOM MOTOR U.	1	
211(4)		VEM0422	FOCUS MOTOR U.	1	
212(4)		VEK5684	LENS FLEX. U.	1	
214(4)		VMT0342	MOTOR CUSHION	2	
215(4)		VDL0314	CRYSTAL FILTER	1	
216(4)		VMX2124	CCD CUSHION	1	
218(4)		VHD0666	SCREW	2	
302(5)		VSC3729	HEAT SINK	1	
304(5)		VEK6063	ECM U.	1	
305(5)		VSC3697	MIC SHIELD CASE	1	
308(5)		VYK4473	FRONT CASE (1) U.	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
310(5)		VHD0729	SCREW	8	
311(5)		VGU5570	SLIDE KNOB	2	
312(5)		VGK2062	LENS RING	1	
313(5)		VYK4447	SIDE CASE (L)(1) U.	1	
315(5)		VKW1650	W.B. SENSOR WINDOW	1	
316(5)		VGU5976	S/S BUTTON	1	
317(5)		VGU5926	VTR OPERATION BUTTON	1	
318(5)		VGU5927	A.F. BUTTON	1	
319(5)		VYC0466	GRIP BELT	1	
320(5)		VYF1759	HOOD CAP U.	1	
321(5)		VKF1903	AV JACK COVER	1	
322(5)		M01KKX07WB06	CRT	1	
324(5)		VJF1021	CRT HOLDER	1	
325(5)		VGQ2496	ROTARY PIECE	1	
326(5)		VMP2327	STEEL BALL	2	
327(5)		VYK4450	EVF BOTTOM CASE U.	1	NV-S6E/A,S600EN
327(5)		VYK4640	EVF BOTTOM CASE U.	1	NV-S6B
328(5)		VGU5569	EVF RING	1	
329(5)		VMP3158	STEEL BALL FIXING PLATE	1	
330(5)		VMC0761	ROTATION LOCK SPRING	1	
332(5)		VGQ2884	ZOOM BUTTON HOLDER	1	
333(5)		VGQ2883	ZOOM BUTTON PIECE	2	
334(5)		VGQ3026	ZOOM BUTTON BARRIER	1	
335(5)		VGU5929	ZOOM BUTTON	1	
336(5)		VGU5930	SNAP SHOT BUTTON	1	
337(5)		VKW1651	PROTECTION PANEL	1	
338(5)		VKM3142	EVF TOP CASE	1	
340(5)		VMG0358	RUBBER SWITCH	1	
341(5)		VMP3762	EVF LOCK PIECE HOLDER	1	
342(5)		VGQ2500	SLIDE PIECE	1	
343(5)		VYQ0768	EYE CAP U.	1	
344(5)		VMG0631	EYE CAP	1	
345(5)		VMG0712	RUBBER CONTACT	2	
350(5)		VEE8055	CONNECTION CABLE	1	(EVF - VTR OPERATION)
351(5)		VEE8087	CONNECTION CABLE	1	(S/S - VTR OPERATION)
352(5)		VEE8150	CONNECTION CABLE	1	(MIC - HI-FI AUDIO)
353(5)		VEE7729	CONNECTION CABLE	1	(IR SENS. - PROCESS)
401(6)		VDW0148	LENS HOOD	1	
402(6)		VHD0729	SCREW	7	
403(6)		VSC3720	CCD SHIELD CASE (A)	1	
404(6)		VWJ0654	FLEXIBLE CARD 24P	1	FP304-FP1001
405(6)		VHN0057	CASE FIXING ANGLE (A)	2	
406(6)		VMP3760	CAMERA FRAME	1	
407(6)		VMD2024	JACK FRAME	1	
408(6)		VMP3761	H.A. EARTH PLATE	1	
409(6)		VKF1707	BUTTERY COVER	1	
410(6)		VYK4444	SIDE CASE (R)(1) U.	1	
411(6)		VGQ2615	BATTERY LOCK PIECE	1	
412(6)		VGQ2607	BATTERY LOCK HOLDER	1	
413(6)		VMB2386	BATTERY LOCK SPRING	1	
414(6)		VMP3323	BATTERY LOCK ANGLE	1	
415(6)		VYP4163	CASSETTE COVER (1) U.	1	NV-S6E/B/A
415(6)		VYP4243	CASSETTE COVER (1) U.	1	NV-S600EN
		VGU5922	DIS BUTTON	1	
418(6)		VGQ2929	CASSETTE COVER PIECE	1	
422(6)		VYP4137	POWER BUTTON PANEL U.	1	
431(6)		ESU39004	CAMERA OPERATION U.	1	
451(7)		VFC1376	SOFT CASE	1	NV-S6B
452(7)		VPG6632	PACKING	1	NV-S6E
452(7)		VPG6633	PACKING	1	NV-S6B
452(7)		VPG6634	PACKING	1	NV-S6A
452(7)		VPG6635	PACKING	1	NV-S600EN
453(7)		VPN3494	CUSHION (UPPER)	1	
454(7)		VPN3495	CUSHION (LOWER)	1	
455(7)		VPN2329	HANDLE	1	
456(7)		VFA0096	AV CORD	1	NV-S6E

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
456(7)		VFA0028	AV CORD	1	NV-S6B/A,S600EN
457(7)		VPN3460	ACCESSORIES BOX	1	
459(7)		VFC0974	SHOULDER STRAP	1	
460(7)		VJA0669	DC OUTPUT CABLE	1	
461(7)		VFA0097	PHONO/BNC PLUG	1	NV-S6B
462(7)		VQT4812	OPERATING INSTRUCTIONS	1	NV-S6E
			(ENGLISH/GERMAN)		
462(7)		VQT4813	OPERATING INSTRUCTIONS	1	NV-S6E
			(FRENCH/SPANISH)		
462(7)		VQT4814	OPERATING INSTRUCTIONS	1	NV-S6E
			(ITALIAN/DUTCH)		
462(7)		VQT4818	OPERATING INSTRUCTIONS	1	NV-S6B
			(ENGLISH/GERMAN/FRENCH)		
462(7)		VQT4815	OPERATING INSTRUCTIONS	1	NV-S6A
			(ENGLISH/GERMAN/FRENCH)		
462(7)		VQT4816	OPERATING INSTRUCTIONS	1	1NV-S600EN
			(ENGLISH/CHINESE/HINDI)		
462(7)		VQT4817	OPERATING INSTRUCTIONS	1	NV-S600EN
			(ARABIC)		
			**** JIG & TOOLS *****		
			------ ELECTRICAL -------		
		VFM8180HUPF	VHS-C ALIGMENT TAPE	1	PAL
		VFK0374	COLOUR TEMP.CONV.FILRTER	1	(C12) OR VFK0713
		VEK0375	COLOUR TEMP.CONV.FILRTER	1	(C2) OR VFK0716
		VFK0644	EVR FIXTURE	1	
		VFK0701ROM8	ROM	1	
		VFK0766A	EVR CONNECTION CABLE 5P	1	
		VFK0734W	MEASUREMENT CABLE 24P	1	
		VFK0825	FRAT CABLE 24P	1	
		VFK0698	EXTENSION CABLE 18P	1	
		VFK0686	EXTENSION CABLE 17P	1	
		VFK0668	EXTENSION CABLE 24P	1	
		VFK0752	EXTENSION CABLE 34P	1	
		VFK0670	EXTENSION CABLE 18P	1	
		VFK0723	EXTENSION CABLE 22P	1	
		VFK0724	EXTENSION CABLE 32P	1	
		VFK0727	EXTENSION CABLE 16P	1	
		VFK0729	EXTENSION CABLE 6P	1	
		VFK0728	EXTENSION CABLE 9P	1	
		VFK0730	EVF CONNECTION CABLE	1	
			---- MECHANICAL ------		
		VFK0743	H-POSITION ADJUSTMENT	1	
		VFK0824	ASTERISK TYPE RENCH	1	
		VFK0335	RETAINING RING REMOVER	1	
		VFK0329	POST ADJ. SCREW DRIVER	1	
		VFK0343	CHECK LIGHT	1	
		VFK0326	HEX WRENCH SET	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLTONE GREASE	1	

4-3. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.Printed circuit board assembly with mark(NLA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			*** CAMERA SECTION ***		
		VEP22119A	SENSOR / DIGI.MEMO. C.B.A.	1	(NLA)
		VEP22125A	SUB SENSOR C.B.A.	1	(NLA) (NV-S6E/B)
		VEP23149A/C	PROCESS / AUTO FOCUS C.B.A.	1	(NLA) (NV-S6E/B)
		NOTE: For NV-S6A, NV-S600EN VEP23149A is as same as VEP23149C. For NV-S6B/E When you replace the PROCESS C.B.A. (VEP23149A) for NV-S6B/E, Please replace with VEP23149C.			
		VEP06814A	IR SENSOR C.B.A.	1	(NLA)
		VEK5883	ZOOM C.B.A.	1	(NLA)
		VEK6095	CCD FLEXIBLE CARD C.B.A.	1	(NLA)
		VEK6030	S/S SWITCH C.B.A.	1	(NLA)
			*** E.V.F. SECTION ***		
		VEP28050A	E.V.F. C.B.A.	1	(NLA)
			*** MIC SECTION ***		
		VEP04382A	MIC C.B.A.	1	(NLA)
			*** VTR SECTION ****		
		VEP03942D	MAIN C.B.A.	1	(NLA)
		VEP01510A	POWER C.B.A.	1	(NLA)<!>
		VEP04381A	HI-FI AUDIO C.B.A.	1	(NLA)
		VEP02397A	DRIVE C.B.A.	1	(NLA)
		VEK5821	AV JACK C.B.A.	1	(NLA)(NV-S6B)
		VEP01540A	AV JACK C.B.A.	1	(NLA)(NV-S6A/E, NV-S600EN)
		VEP06811A	VTR OPERATION C.B.A.	1	(NLA)
	■	VEP22119A	SENSOR / DIGI.MEMO. C.B.A.		(NLA)
			CONNECTORS		
B101		VJS3024C018	CONNECTOR (FEMALE)	1	
B201		VJP2962C012	CONNECTOR (MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
B202		VJS3024C032	CONNECTOR (FEMALE)	1	
			CAPACITORS		
C101		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C102		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C104		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C105		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C106		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C107		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C108		ECEV0JA470	E.CAPACITOR 6.3V 47U	1	
C109		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C110		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C111		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C112		ECUM1H681JCV	C.CAPACITOR CH 50V 680P	1	
C116		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C117		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C119		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C123		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C124,25		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C126		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C127		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C129		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C130		ECST0GY106Z	T.CAPACITOR CH 4V 10U	1	
C131		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C132-37		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	6	
C138		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C139		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C201,02		ECST1CX685Z	T.CAPACITOR 16V 68U	2	
C204		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C205		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C206-08		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C209		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C211-16		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	6	
C217		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C218		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C219		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C220		ECST0GX226Z	T.CAPACITOR CH 4V 22U	1	
C221		ECST0GY106Z	T.CAPACITOR CH 4V 10U	1	
C222		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C223		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C224,25		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C226		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C227		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C228		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C229		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C230		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C231		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C232-34		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C235		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C236		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C259		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C262		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C264		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C265		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C271		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C272		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C274		ECST1VX155Z	T.CAPACITOR 35V 1.5U	1	
C275		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
			DIODES		
D102		MA110	DIODE	1	
D104		MA110	DIODE	1	
D105		MA132WA	DIODE	1	
D201,02		MA110	DIODE	2	
D203		MA728	DIODE	1	
D204		MA110	DIODE	1	
			FILTERS		
FL201		ELB3H009	FILTER	1	
			INTEGRATED CIRCUITS		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC101		TC7S02F	IC	1	
IC102		TC7S08F	IC	1	
IC103		MB8464ALPFEF	IC	1	
IC104		MN73039VSMS	IC	1	
IC105		S8420BF	IC	1	
IC106		MN1551VSTU	IC	1	
IC107		LM311DB	IC	1	
IC108		AN2355FAP	IC	1	
IC201		VCR0362	IC	1	
IC202		LM358DB	IC	1	
IC203		AN2013SB	IC	1	
IC204		AN2033FAP	IC	1	
IC205		TC7S86F	IC	1	
IC206		TC7S08F	IC	1	
			COILS		
L101		ELJFA470KB	COIL 47UH	1	
L102,03		ELJFC150KF	COIL 15UH	2	
L105		ELJFA150KB	COIL 15UH	1	
L106		ELJSC470KB	COIL 47UH	1	
L201		VLQ0584	TRANSFORMER	1	
L202-04		ELJFC150KF	COIL 15UH	3	
L205		ELJSC820KB	COIL 82UH	1	
L206		VLQ0556	COIL	1	
L207		ELJSC680KF	COIL 68UH	1	
L208		ELJFC150KF	COIL 15UH	1	
L209		VLQ0556	COIL	1	
L210		ELJFC4R7KB	COIL 4.7UH	1	
L211		VLQ0556	COIL	1	
L212		VLQ0555	COIL	1	
L213,14		VLQ0584	TRANSFORMER	2	
L215		ELJFC4R7KB	COIL 4.7UH	1	
L216		VLQ0584	TRANSFORMER	1	
			TRANSISTORS		
Q101		2SD2216	TRANSISTOR	1	
Q105		XP4501	TRANSISTOR-TRANSISTOR	1	
Q106		XP4601	TRANSISTOR-TRANSISTOR	1	
Q201,02		XP4601	TRANSISTOR-TRANSISTOR	2	
Q203		2SD2216	TRANSISTOR	1	
Q210		2SB1462	TRANSISTOR	1	
			COMBINATION PARTS		
QR101		UN9210	TRANSISTOR-RESISTOR	1	
QR102		UN9214	TRANSISTOR-RESISTOR	1	
QR103		UN9213	TRANSISTOR-RESISTOR	1	
QR104,05		UN9212	TRANSISTOR-RESISTOR	2	
			RESISTORS		
R101		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R102		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R103		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R104		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R105		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R106		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R107-09		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	3	
R110		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R111		ERJ3GEYG133	M.RESISTOR CH 1/16W 13K	1	
R112		ERJ3GEYG473	M.RESISTOR CH 1/16W 47K	1	
R113,14		ERJ2GE0R00	M.RESISTOR CH 2W 0	2	
R115		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R119		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R120,21		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R122-29		ERJ2GEJ104	M.RESISTOR CH 2W 100K	8	
R130		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R132,33		ERJ2GEJ333	M.RESISTOR CH 2W 33K	2	
R135		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R136,37		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R138		ERJ2GEJ821	M.RESISTOR CH 2W 820	1	
R139		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R140		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R141		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R142		ERJ3GEYG394	M.RESISTOR CH 1/16W 390K	1	
R143-46		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	4	
R147		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R148		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R149		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R150,51		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R201-03		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R204		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R205		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R206		VRE0071E753	RESISTOR	1	
R207		VRE0071E153	RESISTOR	1	
R208		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R209		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R210		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R211		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R212		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R213		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R214		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R215		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R217		ERJ2GEJ684	M.RESISTOR CH 2W 680K	1	
R219		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R223		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R224		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R225		ERJ2GEJ824	M.RESISTOR CH 2W 820K	1	
R226		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R228		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R230		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R231		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R232		ERJ2GEJ334	M.RESISTOR CH 2W 330K	1	
R234		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R235		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R236		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R238		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R239		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R240		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R255,56		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R257		ERJ2GEJ821	M.RESISTOR CH 2W 820	1	
R261		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R268		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R280		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R284,85		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
			CRYSTAL OSCILLATORS		
X101		VSX0412	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3722	SHIELD COVER (BOTTOM)	1	
		VSC3721	SHIELD COVER (TOP)	1	
	■	VEP22125A	SUB SENSOR C.B.A.		(NLA) (NV-S6E/B)
			CAPACITOR		
C276		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C277		ECUX1C150JCV	C.CAPACITOR CH 16V 15P	1	
			COIL		
L217		VLP0140	COIL	1	
			RESISTOR		
R286		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP23149A/C	PROCESS / AUTO FOCUS C.B.A.		(NLA) (NV-S6E/B)
			CONNECTORS		
B301		VJP3159C032	CONNECTOR (MALE)	1	
B302		VJP2962C024	CONNECTOR (MALE)	1	
B305		VJP3159C018	CONNECTOR (MALE)	1	
			CAPACITORS		
C301,02		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	2	
C308		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C316		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C317		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C318		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C319		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C320,21		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C322		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C324,25		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	2	
C326,27		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C328		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C329		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C330		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C331		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C332,33		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C335		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C336		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C339		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C341		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C348,49		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C350		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C351		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C352		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C365		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C366,67		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C368		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C369		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C701		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C702		ECEV05A470	E.CAPACITOR 4V 47U	1	
C703		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C704		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C705		ECUM1C683ZFV	C.CAPACITOR CH 16V 0.068U	1	
C706-09		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C710		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C712		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C713,14		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	2	
C715		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C716		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C717		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C718		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C719		ECST0GY106Z	T.CAPACITOR CH 4V 10U	1	
C720,21		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C722		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C724,25		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C726		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C727		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C729-31		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C732,33		ECUM1C105ZFN	C.CAPACITOR 16V 1U	2	
C734		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C736		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C738		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C739,40		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	2	
C741,42		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C743,44		ECUM1C105ZFN	C.CAPACITOR 16V 1U	2	
			DIODES		
D301,02		MA110	DIODE	2	
D303		MA132WA	DIODE	1	
D304		MA133	DIODE	1	
D701		MA110	DIODE	1	
			CONNECTORS		
FP304		VJS2959D024	CONNECTOR (FEMALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
FP701		VJS2960C020	CONNECTOR (FEMALE)	1	
			INTEGRATED CIRCUITS		
IC301		MN655431SH	IC	1	
IC302		L7A0784	IC	1	
IC303		MN1882010V4S	IC	1	
IC304		MN6732	IC	1	
IC305,06		ZA4030	IC	2	
IC307		XC61AS01XXMR	IC	1	
IC308		T90CK78F3403	IC	1	
IC309		L7A0813	IC	1	
IC310		MN73512XWAS	IC	1	
IC311		M62352GP	IC	1	
IC312		AK6420F	IC	1	
IC313		MN657011H	IC	1	
IC316		AN2040SB	IC	1	
IC701		MN12821Q	IC	1	
IC702		MN6782VMDG	IC	1	
IC703		AN2585FAP	IC	1	
IC704		LM358DB	IC	1	
IC705		LM324DB	IC	1	
IC706		AN6663S	IC	1	
IC707		TB6504F	IC	1	
IC708		XC62AP5002PR	IC	1	
			COILS		
L301		ELJSC470KB	COIL 47UH	1	
L302-04		VLQ0464	COIL	3	
L305		ELJSC560KF	COIL 56UH	1	
L306		VLQ0319F150	COIL 15UH	1	
L307		VLQ0464	COIL	1	
L308		ELJFC150KF	COIL 15UH	1	
L309		ELJSC560KF	COIL 56UH	1	
L310		ELJFC3R9KF	COIL 3.9UH	1	
L311		VLQ0319K100	COIL 10UH	1	
L312		VLQ0464	COIL	1	
L313		VLQ0291	COIL	1	
L314,15		VLQ0464	COIL	2	
L316		ELJFC220KB	COIL 22UH	1	
L317,18		VLP0140	COIL	2	
L320		ELJSC820KB	COIL 82UH	1	
L321		VLQ0464	COIL	1	
L322,23		VLQ0584	TRANSFORMER	2	
L702		VLQ0319K101	COIL 100UH	1	
L703		ELJFC150KF	COIL 15UH	1	
L704		VLQ0319F150	COIL 15UH	1	
			CONNECTORS		
P301		VJP3172D005	CONNECTOR (MALE)	1	
			TRANSISTORS		
Q301		2SC4176	TRANSISTOR	1	
Q302,03		2SD2216	TRANSISTOR	2	
Q701		2SD2216	TRANSISTOR	1	
Q702		2SD2210	TRANSISTOR	1	
Q703		2SB1219	TRANSISTOR	1	
			COMBINATION PARTS		
QR301		UN9212	TRANSISTOR-RESISTOR	1	
QR701		UN9211	TRANSISTOR-RESISTOR	1	
QR702		UN921E	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R301		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R302		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R303		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R307,08		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R309-24		ERJ2GEJ102	M.RESISTOR CH 2W 1K	16	
R325		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R326-33		ERJ2GEJ102	M.RESISTOR CH 2W 1K	8	
R334		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R335		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R337		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R338		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R339		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R340		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R341,42		ERJ2GEJ223	M.RESISTOR CH 2W 22K	2	
R343-48		ERJ2GE0R00	M.RESISTOR CH 2W 0	6	
R349-64		ERJ2GEJ102	M.RESISTOR CH 2W 1K	16	
R365		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R366		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R367,68		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R369-85		ERJ2GEJ102	M.RESISTOR CH 2W 1K	17	
R386		ERJ2GEJ153	M.RESISTOR CH 2W 15K	1	
R388		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R390-94		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	5	
R399		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R401		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R402		ERJ2GEJ563	M.RESISTOR CH 2W 56K	1	
R403		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R404		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R405,06		ERJ2GEJ104	M.RESISTOR CH 2W 100K	2	
R407		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R408		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R409		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R410,11		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R412		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R413		ERJ2GEJ821	M.RESISTOR CH 2W 820	1	
R414		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R415		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R416		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R418		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R419		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R420		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R424		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R425,26		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R428,29		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R432,33		ERJ2GE0R00	M.RESISTOR CH 2W 0	2	
R435		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R436-38		ERJ2GEJ104	M.RESISTOR CH 2W 100K	3	
R439		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R442		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R704,05		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R706,07		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R708		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R710		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R711		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R712		ERJ3GEYG303	M.RESISTOR CH 1/16W 30K	1	
R713		ERJ2GEJ124	M.RESISTOR CH 2W 120K	1	
R714		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R715		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R716		ERJ2GEJ334	M.RESISTOR CH 2W 330K	1	
R717,18		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R719		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R720		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R721		ERJ2GEJ225	M.RESISTOR CH 2W 2.2M	1	
R722		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R723		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R724		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R725		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R726		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R727		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R728		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R729		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R730		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R731		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R733,34		ERJ3GEYJ3R3	M.RESISTOR CH 1/16W 3.3	2	
R735		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R736		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R738		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R739		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R740		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R741,42		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R743		ERJ2GEJ563	M.RESISTOR CH 2W 56K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R744		ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	1	
R745		ERJ2GEJ821	M.RESISTOR CH 2W 820	1	
R746		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R747		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R748		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R750		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R753		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R755-57		ERJ2GEJ103	M.RESISTOR CH 2W 10K	3	
R758		ERJ2GEJ153	M.RESISTOR CH 2W 15K	1	
R759		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R760		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R761		ERJ3GEYG332	M.RESISTOR CH 1/16W 3.3K	1	
R762		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R765		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R766		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R768		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R769		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R770		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
			THERMISTORS		
TH701		VRT0032K152	THERMISTOR	1	
			VARIABLE RESISTORS		
VR701		EVM7JSX30B54	V.RESISTOR 50K	1	
			CRYSTAL OSCILLATORS		
X301,02		EF0V8004B0A	CRYSTAL OSCILLATOR	2	
X701		EF0V6754B0A	CRYSTAL OSCILLATOR	1	
X702		EF0V8004B0A	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3723	SHIELD COVER (TOP)	1	
		VSC3724	SHIELD COVER (BOTTOM)	1	
		VEE7729	ZOOM CONNECTION CABLE	1	
	■	VEP06814A	IR SENSOR C.B.A.		(NLA)
			CAPACITORS		
C6901		ECKF1H101KBB	C.CAPACITOR 50V 100P	1	
C6902		ECEA0JKS101	E.CAPACITOR 6.3V 100U	1	
			DIODES		
D6901		PN327	DIODE	1	
			CONNECTORS		
P6901		VJP3331B005	CONNECTOR (MALE)	1	
			TRANSISTORS		
Q6901		2SD1199-S	TRANSISTOR	1	
			RESISTORS		
R6901		ERDS2TYJ224	RESISTOR	1	
R6902		ERDS2TYJ473	RESISTOR	1	
			SWITCHES		
S6901,02		EVQ6QF02K	SWITCH	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
		VGQ2930	SENSOR BASE	1	
	■	VEK5883	ZOOM C.B.A.		(NLA)
	■	VEK6095	CCD FLEXIBLE CARD C.B.A.		(NLA)
B291		VJS2961C012	CONNECTOR (12P)	1	
			CAPACITORS		
C254,55		CAUM1E473ZFN	C.CAPACITOR CH 25V 0.047U	1	
C292		ECST1VX225Z	T.CAPACITOR CH 35V 2.2U	1	
C295		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
			DIODE		
D292		MA153	DIODE	1	
			TRANSISTOR		
Q291		2SC2295	TRANSISTOR	1	
			RESISTOR		
R291		ERJ6GEYJ560	M.RESISTOR CH 1/16W 56	1	
R292		ERJ6GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
	■	VEK6030	S/S SWITCH C.B.A.		(NLA)
P6601		VJP3331B002	CONNECTOR	1	
S6601		VSP0524	SWITCH	1	
	■	VEP28050A	E.V.F. C.B.A.		(NLA)
			CAPACITORS		
C801		ECWU1C104JA	P.CAPACITOR 16V 0.1U	1	
C802		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C804		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C805		ECST1AV476Z	T.CAPACITOR 10V 47U	1	
C806		ECUM1E123KBN	C.CAPACITOR CH 25V 0.012U	1	
C807		ECUM1C105JB	C.CAPACITOR CH 16V 1U	1	
C808		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C809		ECEV1CA470F	E.CAPACITOR 16V 47U	1	
C810		ECUM2A272JUM	C.CAPACITOR CH 10V 2700P	1	
C811		ECST1AV476Z	T.CAPACITOR 10V 47U	1	
C812		ECUX1H101JV	C.CAPACITOR CH 50V 100P	1	
C813		ECUM2H331KBM	C.CAPACITOR 500V 330P	1	
C814		ECEV1HAS010	E.CAPACITOR CH 50V 1U	1	
C815		ECUM2H331KBM	C.CAPACITOR	1	
C816		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C818		ECUM2H331KBM	C.CAPACITOR	1	
C831		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
			DIODES		
D801		MA141A	DIODE	1	
D802		SFPL-52	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUITS		
IC801		AN2515S	IC	1	
			COILS		
L801		VLQ0319K470	COIL 47UH	1	
L802		ELH5L220Y	COIL	1	
L803		VLQ0319K470	COIL 47UH	1	
			CONNECTORS		
P801		VJP3125D004	CONNECTOR (MALE)	1	
P802		VJP3172D003	CONNECTOR (MALE)	1	
P803		VJP3125D003	CONNECTOR (MALE)	1	
P804		VJP1229T	CONNECTOR (MALE) 2P	1	
			TRANSISTORS		
Q802		2SD968A-S	TRANSISTOR	1	
Q803		2SA1532-B	TRANSISTOR	1	
			RESISTORS		
R801		ERJ6ENF4422	M.RESISTOR	1	
R802		ERJ6GMYJ3R9	M.RESISTOR CH 1/10W 3.9	1	
R805		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R808		ERJ3GEYJ242	M.RESISTOR CH 1/16W 2.4K	1	
R809		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R810		ERJ6GMYF104	M.RESISTOR	1	
R814,15		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R816		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R817		ERJ3GEYJ242	M.RESISTOR CH 1/16W 2.4K	1	
R818		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R819		ERJ6GMYJ395	M.RESISTOR CH 1/10W 3.9M	1	
R820		ERJ6GMYJ475	M.RESISTOR CH1/10W 4.7M	1	
R821		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R823		ERJ3GEYJ3R9	M.RESISTOR CH 1/16W 3.9	1	
R829		ERJ6ENF4222	M.RESISTOR CH 1/10W 2.2K	1	
R831,32		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	2	
			TRANSFORMERS		
T801		ETF08L12A	TRANSFORMER	1	<!>
			VARIABLE RESISTORS		
VR801		EVM7JSX30BE2	V.RESISTOR	1	
VR803		EVM7TSX00BV6	V.RESISTOR	1	
VR804		EVM7TSX00BE6	V.RESISTOR	1	
			MISCELLANEOUS		
		VEE7574	CRT SOCKET UNIT	1	<!>
	■	VEP04382A	MIC C.B.A.		(NLA)
			CAPACITORS		
C4301		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	
C4302		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4303		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4305,06		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C4307		ECUM1C823KBN	C.CAPACITOR 16V 0.082U	1	
C4308		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4309		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	
C4310		ECUX1H271KBV	C.CAPACITOR CH 50V 270P	1	
C4311		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4312		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4313		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4314		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4316,17		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C4318		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4320		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4321		ECEV0JV330S	E.CAPACITOR 6.3V 33U	1	
C4322		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C4324		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C4325		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4326		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4328		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4329		ECEV0JV330S	E.CAPACITOR 6.3V 33U	1	
C4330		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C4334		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
			DIODES		
D4301-03		MA8056-M	DIODE	3	
			JACKS		
J4301		VJJ0319	JACK	1	
			CONNECTORS		
P4301		VJP3172D004	CONNECTOR (MALE)	1	
			TRANSISTORS		
Q4301		2SD1819	TRANSISTOR	1	
Q4302		2SC3929	TRANSISTOR	1	
Q4303,04		2SD1819	TRANSISTOR	2	
Q4305		2SC3929	TRANSISTOR	1	
Q4306		2SD1819	TRANSISTOR	1	
Q4307,08		2SC3929	TRANSISTOR	2	
Q4309,10		2SD1819	TRANSISTOR	2	
Q4311		2SC3929	TRANSISTOR	1	
Q4312		2SD1819	TRANSISTOR	1	
			RESISTORS		
R4301		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4302		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4303		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4304		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R4305		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4306		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4307		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R4308		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4309		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4311		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4312		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4313		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4314		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4315		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R4316		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4317		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R4318		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4319,20		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R4321		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R4322		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4323		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4324		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4325		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4326		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R4327		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4328		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4329		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R4330		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4331		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4333		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4334		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4335		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4336		ERJ6GEYG563	M.RESISTOR CH 1/10W 56K	1	
R4337		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4338		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4339,40		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	2	
R4341		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4342		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4343		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4344		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4345		ERJ6GEYG563	M.RESISTOR CH 1/10W 56K	1	
R4346		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R4347		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4348,49		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	2	
R4350		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4351		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
	■	VEP03942A	MAIN C.B.A.		(NLA)
			CONNECTORS		
B3001		VJP3295D014	CONNECTOR (MALE)	1	
B4001		VJP2963C024	CONNECTOR (MALE)	1	
B6002		VJS2964A017	CONNECTOR (FEMALE)	1	
B6006		VJP3126B034	CONNECTOR (MALE)	1	
B6007		VJP3358C016	CONNECTOR (MALE)	1	
B6201		VJS2961C022	CONNECTOR (FEMALE)	1	
			CAPACITORS		
C3002		ECEV0GA470	E.CAPACITOR 4V 47U	1	
C3004		ECEV0GA471	E.CAPACITOR 4V 470U	1	
C3005		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C3013		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3014		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3015		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3016		ECUX1H561JCV	C.CAPACITOR CH 50V 560P	1	
C3023		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3024		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3025		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3026		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3028		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3029		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3030		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C3031		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C3032		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3033,34		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C3042		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3044		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3048		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3049		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C3050		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C3051		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C3052		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C3053		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3057		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C3059		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C3060		ECEV1EA4R7	E.CAPACITOR 25V 4.7U	1	
C3061		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3062		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3065		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3072		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3075		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C3076		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C3078,79		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C3081		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3087		ECUM1E393KBN	C.CAPACITOR CH 25V 0.039U	1	
C3092		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3094		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3095		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C4001		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C4002		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4003		ECUX1H821KBV	C.CAPACITOR CH 50V 820P	1	
C4004		ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
C4005		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C4008		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C4009		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4010		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C4011		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C4012		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C4013		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C4014		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4015		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4016		ECST1EY105Z	T.CAPACITOR 25V 1U	1	
C4017		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C4018		ECUM1H123KBN	C.CAPACITOR CH 50V 0.012U	1	
C4019		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4020		ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
C4021		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4022		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4023		ECUM2A682JCM	C.CAPACITOR CH 10V 6800P	1	
C4024		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4025		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C4026		ECST0JC336Z	T.CAPACITOR 6.3V 33U	1	
C4030		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4031		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4032		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4033		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C4034		ECUX1H562KBV	C.CAPACITOR CH 50V 5600P	1	
C4035		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4047		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C4048		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4052		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C5001		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5002,03		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C5004-11		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	8	
C5012-15		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	4	
C5016-23		ECUM1C105ZFN	C.CAPACITOR 16V 1U	8	
C5024		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5025-27		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C5028		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	
C5029		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C5030,31		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C5032		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5033		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5034		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5035-39		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	5	
C5040-43		ECUM1H681JCV	C.CAPACITOR CH 50V 680P	4	
C5044-47		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C5048-51		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	4	
C5052		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C5053		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C5054		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C5055,56		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C5058,59		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C5060		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5062-65		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C5066		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5067		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5072		ECUM1H123KBN	C.CAPACITOR CH 50V 0.012U	1	
C5073		ECUM1C683KBN	C.CAPACITOR 16V 0.068U	1	
C5080		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5081		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6001		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C6002		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6003		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C6004		ECRJA030E11	TRIMMER	1	
C6005-07		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C6008		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C6009		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6010		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C6011		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6012		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C6013-17		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	5	
C6018		ECUM1C225ZFM	C.CAPACITOR CH 16V 2.2U	1	
C6019		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6020,21		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C6022		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C6024		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6025,26		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	2	
C6027		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6028-34		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C6035		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C6050		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C6201,02		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C6203		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C6204		ECEV1EAS4R7	E.CAPACITOR 25V 4.7U	1	
C6205		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C6206		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C6207		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C6208,09		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	2	
C6210		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6211,12		ECST0GY156Z	T.CAPACITOR CH 4V 15U	2	
C6213		ECWU1C273J	CAPACITOR CH 16V 0.027U	1	
C6214		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C6215		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C6216		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8002		ECUX1H060DCV	C.CAPACITOR CH 50V	1	
C8003		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C8004		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	(NV-S6A,NV-S600EN)
C8005		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	(NV-S6A,NV-S600EN)
C8008		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C8015		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8016		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8017		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8040		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C8048		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C8049		ECST0JY475Z	T.CAPACITOR 6.3V 4.7U	1	
C8050,51		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C8062,63		ECUX1H181JCV	C.CAPACITOR CH 50V 180P	2	
C8064		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C8066		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C8071		ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	1	
C8072		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8074		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C8076		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C8101		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8102		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C8103		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C8104		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8105		ECSF0JE226B	T.CAPACITOR 6.3V 22U	1	(NV-S6E/B)
C8106		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	(NV-S6E/B)
			DIODES		
D3003		MA132WA	DIODE	1	
D3004,05		MA132WK	DIODE	2	
D3020		MA729	DIODE	1	
D4002		MA132WK	DIODE	1	
D5001		MA159	DIODE	1	
D5002		MA132WA	DIODE	1	
D5003		MA159	DIODE	1	
D5004		MA132WA	DIODE	1	
D5005		MA133	DIODE	1	
D5006-09		MA728	DIODE	4	
D6001		MA132WA	DIODE	1	
D6004		MA132K	DIODE	1	
D6005		MA132WA	DIODE	1	
D6006,07		MA736	DIODE	2	
D6008		MA132K	DIODE	1	
D6009,10		MA3130	DIODE	2	
D6011		MA132WK	DIODE	1	
D6012		MA132WA	DIODE	1	
D6013		MA132WK	DIODE	1	
D6014		MA133	DIODE	1	
D6015		MA132K	DIODE	1	
D6016		MA133	DIODE	1	
D6017-23		MA132WA	DIODE	7	
D6024		MA133	DIODE	1	
D6025		MA132K	DIODE	1	
D8001		MA132WK	DIODE	1	
			CONNECTORS		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
FP4002		VJS2959B009	CONNECTOR (FEMALE)	1	
FP5001		VJS2959B023	CONNECTOR (FEMALE)	1	
FP6001		VJS2959B016	CONNECTOR (FEMALE)	1	
FP6004		VJS2959B016	CONNECTOR (FEMALE)	1	
FP6005		VJS2959B006	CONNECTOR (FEMALE)	1	
			INTEGRATED CIRCUITS		
IC3001		VEFH25E	IC	1	
IC3002		TL8809F	IC	1	
IC3005		BA7062F	IC	1	
IC4001		BA7757BK	IC	1	
IC5001		AN3350FHP	IC	1	
IC6001		UPD6456GT623	IC	1	
IC6004		M54543AFP	IC	1	
IC6005		XC62AP5002PR	IC	1	
IC6006		MN12821R	IC	1	(R)
IC6007		MN6755243V4X	IC	1	
IC6008		TC4S66F	IC	1	
IC6009		LM393DB	IC	1	
IC6010		S3500B3	IC	1	
IC8001		VEFH26B	IC	1	
IC8002		TL8833F	IC	1	
			COILS		
L3001,02		ELJPA101KB	COIL 100UH	2	
L3003		ELJFA820JB	COIL 82UH	1	
L3004		ELJPA150KB	COIL 15UH	1	
L3005		ELJFA121JB	COIL 120UH	1	
L3009		ELJPA150KB	COIL 15UH	1	
L3010		ELJSC470JF	COIL 47UH	1	
L3011		ELJFC150JB	COIL 15UH	1	
L3015		ELJSC680JF	COIL 68UH	1	
L3016		ELJSC330JF	COIL 33UH	1	
L3018		ELJPA560KB	COIL 56UH	1	
L3019		ELJPA221KB	COIL 220UH	1	
L3021		ELJSC390JB	COIL 39UH	1	
L3024		ELJPA101KB	COIL 100UH	1	
L3043		ELJSC680JF	COIL 68UH	1	
L4001		VLQ0423J153	COIL 15MH	1	
L4002,03		ELJPA101KB	COIL 100UH	2	
L5001		ELJPA221KB	COIL 220UH	1	
L5002,03		ELJPA150KB	COIL 15UH	2	
L5004		ELJPA101KB	COIL 100UH	1	
L5005		VLQ0401K120	COIL 12UH	1	
L5006-08		ELJPA150KB	COIL 15UH	3	
L6001		ELJPA101KB	COIL 100UH	1	
L6002		ELJSC330KB	COIL 33UH	1	
L8001		ELJSC270JB	COIL 27UH	1	
L8002,03		ELJFC100JB	COIL 10UH	2	
L8004		ELJPA150KB	COIL 15UH	1	
L8006		ELJSC330JF	COIL 33UH	1	
L8007		ELJPA150KB	COIL 15UH	1	
L8012		ELJPA150KB	COIL 15UH	1	
L8013		ELJFA390JF	COIL 39UH	1	
L8014		ELJFA151JB	COIL 150UH	1	
			CONNECTORS		
P6003		VJP3125D002	CONNECTOR (MALE)	1	
			TRANSISTORS		
Q3001		2SB970X	TRANSISTOR	1	
Q3002		2SD2216	TRANSISTOR	1	
Q3004		2SD2216	TRANSISTOR	1	
Q3008,09		2SC4627	TRANSISTOR	2	
Q3011		2SB1462	TRANSISTOR	1	
Q3012		2SD2216	TRANSISTOR	1	
Q3014		2SB1462	TRANSISTOR	1	
Q3015		XP1501	TRANSISTOR-TRANSISTOR	1	
Q3018		2SB1462	TRANSISTOR	1	
Q3019		2SD2216	TRANSISTOR	1	
Q3021		2SB1462	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q4001		2SD602-R	TRANSISTOR	1	(R)
Q4002		2SB1219	TRANSISTOR	1	
Q4003		2SB1220	TRANSISTOR	1	
Q4004		2SD2216	TRANSISTOR	1	
Q4005,06		2SD1819A-R	TRANSISTOR	2	
Q4007		2SD2216	TRANSISTOR	1	
Q4009		2SD2216	TRANSISTOR	1	
Q4011		2SD2216	TRANSISTOR	1	
Q4015		XP4601	TRANSISTOR-TRANSISTOR	1	
Q5001,02		XN4504	TRANSISTOR-TRANSISTOR	2	
Q5003		2SB970X	TRANSISTOR	1	
Q5004,05		2SA812	TRANSISTOR	2	
Q5006,07		XN4504	TRANSISTOR-TRANSISTOR	2	
Q5008,09		2SD1328	TRANSISTOR CHIP	2	
Q5010		2SB970X	TRANSISTOR	1	
Q6001		2SD2216	TRANSISTOR	1	
Q6002		XP4501	TRANSISTOR-TRANSISTOR	1	
Q6006,07		XP4501	TRANSISTOR-TRANSISTOR	2	
Q6201		2SB1462	TRANSISTOR	1	
Q6202		2SB956	TRANSISTOR	1	
Q8001		2SD2216	TRANSISTOR	1	
Q8006		2SD2216	TRANSISTOR	1	
Q8009		2SB1462	TRANSISTOR	1	
			COMBINATION PARTS		
QR3001		UN9212	TRANSISTOR-RESISTOR	1	
QR3005		UN9213	TRANSISTOR-RESISTOR	1	
QR3008		UN9212	TRANSISTOR-RESISTOR	1	
QR3010		UN9212	TRANSISTOR-RESISTOR	1	
QR3015-17		UN9213	TRANSISTOR-RESISTOR	3	
QR3020-22		UN9212	TRANSISTOR-RESISTOR	3	
QR4003		XN1213	TWIN TRANSISTOR	1	
QR4007		UN9213	TRANSISTOR-RESISTOR	1	
QR5001		UN9213	TRANSISTOR-RESISTOR	1	
QR5002,03		UN9212	TRANSISTOR-RESISTOR	2	
QR5004		XP1213	TWIN TRANSISTOR	1	
QR5005		UN9213	TRANSISTOR-RESISTOR	1	
QR6001		UN9112	TRANSISTOR-RESISTOR	1	
QR6002		UN9111	TRANSISTOR-RESISTOR	1	
QR6003		UN9213	TRANSISTOR-RESISTOR	1	
QR6004		UN9115	TRANSISTOR-RESISTOR	1	
QR6005		UN9213	TRANSISTOR-RESISTOR	1	
QR6006		UN9215	TRANSISTOR-RESISTOR	1	
QR6007		UN2130	TRANSISTOR-RESISTOR	1	
QR6008		XN4130	TRANSISTOR-RESISTOR	1	
QR6009		UN9210	TRANSISTOR-RESISTOR	1	
QR6010		UN9213	TRANSISTOR-RESISTOR	1	
QR6011		XN1212	TRANSISTOR-TRANSISTOR	1	
QR6012,13		UN9213	TRANSISTOR-RESISTOR	2	
QR6014		UN9112	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R3001		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R3002		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3010		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3012,13		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	2	
R3023		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R3024		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R3025		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3026		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R3028		ERJ2GEJ681	M.RESISTOR CH 2W 680	1	
R3030		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R3042		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R3043		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3049		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R3051		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R3052		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R3053		ERJ2GEJ134	M.RESISTOR CH 2W 130K	1	
R3054		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R3058		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R3059		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R3060		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R3066		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3068,69		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R3070		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3071		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R3072		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3073		ERJ2GEJ681	M.RESISTOR CH 2W 680	1	
R3074,75		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R3078		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3080		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3085		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R3090		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R3091		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3097		ERJ2GEJ224	M.RESISTOR CH 2W 220K	1	
R3098		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R3103,04		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R3109		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R3111		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R3113		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3115		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3116		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R3119		ERJ2GEJ474	M.RESISTOR CH 2W 470K	1	
R3120		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R3122		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R3123		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3124,25		ERJ2GEJ223	M.RESISTOR CH 2W 22K	2	
R3127		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R3128		ERJ2GEJ124	M.RESISTOR CH 2W 120K	1	
R3129,30		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R3133		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R3134		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3139		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3140		ERJ2GEJ183	M.RESISTOR CH 2W 18K	1	
R3141		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R3159,60		ERJ2GE0R00	M.RESISTOR CH 2W 0	2	
R3170,71		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
R3172		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R3173		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R3174-76		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	3	
R3177		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R4001		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4002		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4003		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4004		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4005		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4006		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4007		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4008		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4009		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4010		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R4011		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R4012		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4015		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4018		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4019		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4020		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R4021		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4022		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R4023		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4024		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4025		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4026		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4027		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R4028		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4029-31		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	3	
R4032		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R4033		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4034		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R4035		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R4036		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R4037		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4038		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R4040,41		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R4042		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4043		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4044		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4045-47		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4048		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4049		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R4050		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R4051		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4054		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4061,62		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	2	
R4064,65		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R4066		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4068		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R4071		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R4072		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4073,74		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R4075,76		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R4078		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R5001		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R5002		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R5003		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R5004-07		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	4	
R5008-11		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	4	
R5012,13		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R5014		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R5015		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R5016-19		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	4	
R5020-23		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	4	
R5024		ERJ3GEYJ4R7	M.RESISTOR CH 1/16W 4.7	1	
R5025		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R5026		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R5027		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R5028		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R5029,30		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	2	
R5032		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R5033,34		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R5035		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R5036		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R5037		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R5038,39		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R5050-53		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	4	
R6001		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6002-08		ERJ2GEJ102	M.RESISTOR CH 2W 1K	7	
R6009,10		ERJ8GEYJ2R2	M.RESISTOR CH 1/8W 2.2	2	
R6013		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6014		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6015		ERJ8GEYJ390	M.RESISTOR CH 1/8W 39	1	
R6016		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6017,18		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6019		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R6020		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R6021-28		ERJ2GEJ473	M.RESISTOR CH 2W 47K	8	
R6029-36		ERJ2GEJ102	M.RESISTOR CH 2W 1K	8	
R6037		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R6038		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6039		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6040		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R6041		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6042		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6043		ERJ2GEJ224	M.RESISTOR CH 2W 220K	1	
R6044		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6045		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6046		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6047		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R6048		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6049-51		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R6052		ERJ2GEJ272	M.RESISTOR CH 2W 2.7K	1	
R6053		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6054,55		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	2	
R6056,57		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R6058		VRE0067G223	RESISTOR	1	
R6059		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6060		VRE0067G273	RESISTOR	1	
R6061		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6062		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6063,64		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6065		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R6066		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R6067		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6068		ERJ2GEJ474	M.RESISTOR CH 2W 470K	1	
R6069,70		ERJ2GEJ184	M.RESISTOR CH 2W 180K	2	
R6071		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R6072,73		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6074		ERJ2GEJ394	M.RESISTOR CH 2W 390K	1	
R6075-77		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R6078		ERJ2GEJ564	M.RESISTOR CH 2W 560K	1	
R6079-84		ERJ2GEJ102	M.RESISTOR CH 2W 1K	6	
R6085		ERJ2GEJ394	M.RESISTOR CH 2W 390K	1	
R6086		ERJ2GEJ564	M.RESISTOR CH 2W 560K	1	
R6087-89		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	3	
R6090-92		ERJ2GEJ103	M.RESISTOR CH 2W 10K	3	
R6093		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6095		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6097-99		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	3	
R6100,01		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R6102,03		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6104		ERJ2GEJ824	M.RESISTOR CH 2W 820K	1	
R6105		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6106		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6107		ERJ2GEJ471	M.RESISTOR CH 2W 470	1	
R6108,09		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R6110		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6113		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6114		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R6115		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6117		ERJ2GEJ684	M.RESISTOR CH 2W 680K	1	
R6119-21		ERJ2GEJ473	M.RESISTOR CH 2W 47K	3	
R6122		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R6124		ERJ6GEYJ4R7	M.RESISTOR CH 1/10W 4.7	1	
R6126		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6127		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6128		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6129		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6130		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6131,32		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R6133		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6134		ERJ2GEJ272	M.RESISTOR CH 2W 2.7K	1	
R6135		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6137		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6138		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6201		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R6202		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6204		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6205		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R6206		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6207		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6208,09		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	2	
R6210		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R6211		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6212,13		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R6214		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6215		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R6216		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6217		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6218		ERJ2GEJ224	M.RESISTOR CH 2W 220K	1	
R6219		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6220		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6221		ERJ8GEYJ471	M.RESISTOR CH 1/8W 470	1	
R8003		ERJ2GEJ272	M.RESISTOR CH 2W 2.7K	1	
R8014		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8016		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R8017		ERJ2GEJ681	M.RESISTOR CH 2W 680	1	
R8044		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R8045		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R8054		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8057,58		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	2	
R8062		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R8065		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R8066		ERJ3GEYG392	M.RESISTOR CH 1/16W 3.9K	1	
R8067		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8070		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R8071,72		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R8075		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R8114		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			TRANSFORMERS		
T4001		VLQ0580	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR3001		EVM7JSX10B13	V.RESISTOR	1	
VR3005		EVM7JSX10B23	V.RESISTOR	1	
VR3008		EVM7JSX10B52	V.RESISTOR	1	
VR4001		EVM7JSX10B14	V.RESISTOR	1	
VR4002		EVM7JSX10B54	V.RESISTOR	1	
VR4003,04		EVM7JSX10B23	V.RESISTOR	2	
VR6201		EVM7JSX10B15	V.RESISTOR	1	
VR8001		EVM7JSX10B23	V.RESISTOR	1	
			CRYSTAL OSCILLATORS		
X6001		VSX0461	CRYSTAL OSCILLATOR	1	
X6003		VSX0510	CRYSTAL OSCILLATOR	1	
X8001		VSX0419	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3706	SHIELD COVER (FRONT)	1	
		VSC3707	SHIELD COVER (REAR)	1	
	■	VEP01510A	POWER C.B.A.		(NLA)<!>
			CONNECTORS		
B6501		VJS2961A034	CONNECTOR (FEMALE)	1	
			CAPACITORS		
C1001		ECUM1C335ZFM	C.CAPACITOR CH 16V 3.3U	1	
C1002		ECEV1EA470	E.CAPACITOR 25V 47U	1	
C1003		ECGC0KA8R2	CAPACITOR	1	
C1004		ECUX1H331KBV	C.CAPACITOR CH 50V 330P	1	
C1005		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C1006		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C1008		ECGC0KA8R2	CAPACITOR	1	
C1009		ECUX1H331KBV	C.CAPACITOR CH 50V 330P	1	
C1010		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C1011		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C1012		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C1013		ECGC1BA4R7	CAPACITOR	1	
C1014		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C1015		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C1017		ECUM1E105ZFM	C.CAPACITOR CH 25V 1U	1	
C1019		ECUM1E474ZFM	C.CAPACITOR CH 25V 0.47U	1	
C1020		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C1022		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C1024		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C1025		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1026		ECEV1HA010	E.CAPACITOR 50V 1U	1	
C1027		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C1028		ECEV1HAR47	E.CAPACITOR CH 50V	1	
C1029		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1030		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1031		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1032		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1033-35		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C1036		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1037		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1042		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C1043		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C1046		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1051		ECUM1H104ZFM	C.CAPACITOR CH 50V 0.1U	1	
C1063		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1064		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C1066		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C6501		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
			DIODES		
D1002		MA736	DIODE	1	
D1003		MA110	DIODE	1	
D1004		MA736	DIODE	1	
D1005		SB05-05CP	DIODE	1	
D1006,07		MA142K	DIODE	2	
D1008		MA728	DIODE	1	
D1009		RD10M	DIODE	1	
D1062		SB05-05CP	DIODE	1	
D1064		MA728	DIODE	1	
D6501		MA141WA	DIODE	1	
D6502		CL150UR	DIODE	1	
D6503		MA728	DIODE	1	
			CONNECTORS		
FP1001		VJS2960C024	CONNECTOR (FEMALE)	1	
			INTEGRATED CIRCUITS		
IC1001		BA9705K	IC	1	
			JACKS		
J1001		VEK5444	BATTERY UNIT	1	
J6501		VEK5717	BATTERY ASSY.	1	
			COILS		
L1001		ELC6UB4R7M	COIL 4.7UH	1	
L1002		ELL04T008R	COIL	1	
L1003		ELC6UB4R7M	COIL 4.7UH	1	
L1004		ELJPA100KB	COIL 10UH	1	
L1006		ELJPA470KB	COIL 47UH	1	
L1007		ELL04T033R	COIL	1	
L1008		ELC6UB4R7M	COIL 4.7UH	1	
L1009		ELJPA100KB	COIL 10UH	1	
L1010,11		ELJPA101KB	COIL 100UH	2	
L1012		ELJPA100KB	COIL 10UH	1	
L1062		ELL04T035R	COIL	1	
L1102,03		VLP0134	COIL	2	
			TRANSISTORS		
Q1001		2SB1073	TRANSISTOR	1	
Q1002,03		2SB956	TRANSISTOR	2	
Q1004		2SD2210	TRANSISTOR	1	
Q1005		2SB1073	TRANSISTOR	1	
Q1006		2SB970X	TRANSISTOR	1	
Q1062		2SB956	TRANSISTOR	1	
Q6501		2SD1819	TRANSISTOR	1	
			COMBINATION PARTS		
QR1002		UN5214	TRANSISTOR-RESISTOR	1	
QR1004		UN5214	TRANSISTOR-RESISTOR	1	
QR1005		UN5114	TRANSISTOR-RESISTOR	1	
QR1061		UN5115	TRANSISTOR-RESISTOR	1	
QR6501		UN5212	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R1001		VRE0067G822	RESISTOR	1	
R1002		VRE0067G272	RESISTOR	1	
R1003		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1004		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R1005		VRE0067G562	RESISTOR	1	
R1006		VRE0067G272	RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1007		ERJ8GEYJ330	M.RESISTOR CH 1/8W 33	1	
R1008		VRE0067G103	RESISTOR	1	
R1009		VRE0067G152	RESISTOR	1	
R1012		ERJ3GEYG163	M.RESISTOR CH 1/16W 16K	1	
R1013		ERJ3GEYG393	M.RESISTOR CH 1/16W 39K	1	
R1014,15		VRE0067G182	RESISTOR	2	
R1016		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R1017		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1018		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1019		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1020		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1021		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R1022		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R1023		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R1024		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1025		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1026		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1027		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1032		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1033		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1035		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1038		VRE0034E910	M.RESISTOR CH 1/10W 91	1	
R1039		VRE0034E241	M.RESISTOR CH 1/10W 240	1	
R1040		VRE0034E26A	M.RESISTOR CH 1/10W 182	1	
R1062		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R1063		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1065		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R1101		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R1115		VSF0092	RESISTOR	1	
R6501		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6502		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R6504		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
			SWITCHES		
S6501		VSS0348	SWITCH	1	
S6502		EVQPJT05M	SWITCH	1	
			TRANSFORMERS		
T1001		ELL04T036R	TRANSFORMER	1	
			MISCELLANEOUS		
		VSC3659	SHIELD COVER (TOP)	1	
		VSC3660	SHIELD COVER (BOTTOM)	1	
		VGQ2598	LED ANGLE PICE	1	
		VMZ2036	BARRIER	1	
	■	VEP04381A	Hi-Fi AUDIO C.B.A.		(NLA)
			CONNECTORS		
B4501		VJS2961C024	CONNECTOR (FEMALE)	1	
			CAPACITORS		
C4501,02		ECEV0GAN470	E.CAPACITOR 4V 47U	2	
C4503,04		ECEV1AAN100	E.CAPACITOR 10V 10U	2	
C4507		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4508		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C4509		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C4510		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4511		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4512		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C4513,14		ECST1CY335Z	T.CAPACITOR 16V 3.3U	2	
C4515		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4516		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4517,18		ECEV05A470	E.CAPACITOR 4V 47U	2	
C4523		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C4524		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C4525		ECUX1H181JCV	C.CAPACITOR CH 50V 180P	1	
C4527		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4528		ECST0JX156Z	T.CAPACITOR 6.3V 15U	1	
C4529		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C4536		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C4537		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C4538		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C4539,40		ECST0GX226Z	T.CAPACITOR CH 4V 22U	2	
C4541		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C4542		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C4551		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
			DIODES		
D4501		MA132K	DIODE	1	
D4502		MA8043-M	DIODE	1	
			FILTERS		
FL4501		VLF0934	FILTER	1	
FL4502		VLF0935	FILTER	1	
			INTEGRATED CIRCUITS		
IC4501		VEFH27B	IC	1	
IC4502		BA3308F	IC	1	
			COILS		
L4501		ELJPA221KB	COIL 220UH	1	
L4503		ELJPA331KB	COIL 330UH	1	
L4504		ELJSC560JF	COIL 56UH	1	
			CONNECTORS		
P4502		VJP3172D004	CONNECTOR (MALE)	1	
			TRANSISTORS		
Q4513,14		2SD1328	TRANSISTOR CHIP	2	
			COMBINATION PARTS		
QR4502		UN9215	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R4501-03		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	3	
R4504		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R4506		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R4509		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4511		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4513		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4516		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4517		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4520,21		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R4547		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R4552		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R4553		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4554		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4556		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4557		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4558		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4559		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4575,76		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP02397A	DRIVE C.B.A.		(NLA)
			CAPACITORS		
C2001		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C2002		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	1	
C2003		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2005		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2006		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2007		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	1	
C2008		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2009,10		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	2	
C2011,12		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	2	
C2013		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C2014		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C2015-17		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	3	
C2018		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C2019		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2020		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2021		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C2022-24		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C2025-27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C2028		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2029		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C2030		ECUM1C564KXM	C.CAPACITOR 16V 0.056U	1	
C2033		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C2035		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2036		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C2037		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2038,39		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C2042		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C2044		ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C2049,50		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
			INTEGRATED CIRCUITS		
IC2001		AN3893NFHP	IC	1	
IC2002		UN224	TRANSISTOR	1	
IC2003		AN3894FHP	IC	1	
IC2004		UN224	TRANSISTOR	1	
			CONNECTORS		
P2001		VJP3240C022	CONNECTOR (MALE)	1	
P2002		VJS2848D007	CONNECTOR (FEMALE)	1	
P2003		VJS2958D018	CONNECTOR (FEMALE)	1	
			COMBINATION PARTS		
QR2001		ON2170-LM	PHOTO INTERRUPTER	1	
QR2002		UN5215	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R2001		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2002		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2003		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R2004		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R2005		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R2006		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	
R2007		ERJ8GEYJR47	M.RESISTOR CH 1/8W 0.47	1	
R2008-10		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R2011		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R2013		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	
R2015		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2016		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2017		ERJ3GEYJ824	M.RESISTOR CH 1/16W 820K	1	
R2019,20		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R2021		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2022		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2023		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R2032		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R2037		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2049		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2050		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R2051		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2056		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2061		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
			MISCELLANEOUS		
		VMD1842	REEL SENSOR HOLDER	1	
	■	VEK5821	AV JACK C.B.A.		(NLA)(NV-S6B)
B1501		VJS3294A014	CONNECTOR (14P)	1	
			MISCELLANEOUS		
		VEJ1308	AV JACK	1	
		VEJ1332	HEAD PHONE JACK	1	
	■	VEP01540A	AV JACK C.B.A.		(NLA)(NV-S6E/A,
					NV-S600EN)
			CONNECTORS		
B1501		VJS3294C014	CONNECTOR (FEMALE)	1	
			COILS		
L1501		VLQ0555	COIL	1	
L1502,03		VLQ0584	TRANSFORMER	2	
L1504		VLP0140	COIL	1	
L1505		VLQ0584	TRANSFORMER	1	
L1506		VLP0140	COIL	1	
L1507		VLQ0584	TRANSFORMER	1	
			MISCELLANEOUS		
		VEJ1332	HEAD PHONE JACK	1	
		VEJ1308	AV AJCK	1	
	■	VEP06811A	VTR OPERATION C.B.A.		(NLA)
			DIODES		
D6301		MA141WK	DIODE	1	
D6302		MA151WA	DIODE	1	
D6303-05		MA141WA	DIODE	3	
D6306		MA110	DIODE	1	
			CONNECTORS		
P6301		VJP3172D003	CONNECTOR (MALE)	1	
P6302		VJP3160D017	CONNECTOR (MALE)	1	
P6303		VJP3172D002	CONNECTOR (MALE)	1	
P6304		VJP3125D005	CONNECTOR (MALE)	1	
			SWITCHES		
S6301		VSS0342	SWITCH	1	
S6302-08		EVQPA401K	SWITCH	7	
S6309		VSS0342	SWITCH	1	
S6311		EVQPA401K	SWITCH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks